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Community Movements in Proto-Historic India

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K.M. SRIVASTAVA

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Community Movements in Protohistoric India

K. M. SRIVASTAVA

AGAM KALA PRAKASHAN
DELHI

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Dedicated

to

My Parents

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Foreword

In Indian proto-history, the Chalcolithic Cultures play a very significant part. The characteristic dominant ceramic is black-and-red ware. It is found in Chalcolithic Cultures from Bengal to Gujarat, and also in Rajasthan and Central India. It is found with Harappan at Lothal. In South India it is associated with the Megaliths in Iron age. They have been also reported from Neolithic layers in Chirand and are possibly present in Neolithic Utnoor and Piklihal. It is therefore both a gigantic task and a challenge to collate the entire data comprising the black-and-red ware culture complex. The wide distribution of the ware in space and time deserves to be studied in depth and on a wide canvas. The inverted-firing technique may be basically the same, but pottery forms and types and associated wares and antiquities show variety from region to region, naturally because of local needs and regional traditions. I had been for some time now thinking that exhaustive studies of pre- and proto-historic Indian wares in context of the total assemblage would be very helpful in filling in the missing details in the life of our ancestors through the dim past.

I had suggested to Sri K.M. Srivastava, a senior officer of the Archaeological Survey of India who was then posted in Patna to take up this subject. I am very happy that inspite of heavy official duties including exacting bouts of field excavations at Piprahwa and Bodh Gaya (Sujata Kutir), Sri Srivastava has now completed the work. He has taken area-wise studies and has devoted meticulous care in arranging the pottery types and their comparative analysis between the areas of distribution. The total picture as emerging in each area in the entire archaeological context has been well delineated. A critical assessment of the results has been attempted. The work is well documented and profusely illustrated.

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This very exhaustive and critical work on a specific ceramic-dominated cultures will fill in to some extent the gap in our knowledge of protohistory of India. Who were the people who introduced this ware or technique ? Whence the inspiration came—migration or stimulus diffusion. Were all these local cultures arising in different parts of the country independently of one another ? Do the string of C14 dates tell any coherent history ? Can these Black-and-Red Ware people or peoples be identified with the Vedic, later Vedic or Epic ruling tribes ? These and many other questions arise and remain unsatisfactorily explained. But a book of this kind will certainly stimulate further researches and provoke thought-dynamism on the entire complex.

I have no doubt that as his excellent monograph on Piprahwa, this work will also be well received by archaeologists and historians.

B. P. Sinha

Professor and Head of the Department,
Ancient History, Culture and Archaeology,
University of Patna, Patna.

September, 22, 1979.
Patna.

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Preface

The idea to write this book, though not in its present form, occurred to me as long back as 1955 when I was conducting excavation at Lothal in Gujarat. Lothal happened to be the first site in India where the Black-and-Red Ware was encountered in Harappan context. The archaeologists were very much obsessed on the new find, because till then the Black-and-Red Ware was considered to be only a funerary goods, part and parcel of Megalithic burials in South India. Instead of analysing and studying the new find with an open mind, one of the so-called top-ranking archaeologist of the country went to the extent of remarking, "Mr. Srivastava, you should not talk like this. You have yet to go a long way". When the Black-and-Red Ware was reported from a large number of Harappan sites in Gujarat, the archaeologists were forced to adjust to the new evidence. Though it may not be appreciated by a majority of scholars, both Indian and foreign, I am very much constrained to point out that pre-conceived notions, ideas and theories, more than often, sound the death-knell of not only archaeology, but all subjects whatsoever. It is much more so, when the evidences are moulded and twisted to establish one or the other pre-conceived theories. Hypothesis is no doubt the beginning of any research work, but the scholars should be conscious enough not to play with the evidences. They should always be prepared to study the new finds in proper perspective with an open mind. There is always a wide gulf between probability and finality. Probability is the hypothesis and finality is the ultimate conclusion. Both these extremes are demarcated by the line of facts and the scholars should feel proud in making any declaration by standing on that line. In research work nothing is final, because once we accept anything as final, future research on the subject will not be undertaken.

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The remarks of the top-ranking archaeologist mentioned above, though a little irritating, generated a feeling of challenge in my mind and I decided to study the subject in detail. Having taken such a long time for producing this book may lead scholars to heap scorns, but I may not be far from truth in stating that archaeology was in infancy for a considerably long time, so far as the study of the Black-and-Red Ware was concerned. Further, the book was delayed unduly by many other pre-occupations, of which the excavations at Piprahwa, which led to the identification of Kapilavastu stand at the top.

While the excavations at Lothal were in progress, I was called upon to undertake an extensive exploration of South-eastern Rajasthan in the river valleys of Ahar, Berach, Banas and their affluents, which must be considered as the nuclear region for the study of the Black-and-Red Ware. The assignment was indeed a golden opportunity for me. During the course of my explorations, lasting for three seasons from 1956-57, I brought to light many important Black-and-Red Ware sites, of which Gilund in Udaipur District of Rajasthan was the most potential in establishing a link between the Painted Grey Ware Culture of Indo-Gangetic basin and the Black-and-Red Ware of South-eastern Rajasthan. Excavation at Gilund was no doubt undertaken in 1960, but it did not continue for more than a season. Hence, even the cultural sequence of the site could not be worked out satisfactorily. It may be recorded here that Gilund is the first and probably the only site in India, wherefrom both burnt-brick and mud-brick structures have been reported from the Chalcolithic levels. I was fortunate enough in being associated with the excavation and now impatiently feel that no further time should be lost in resuming the excavation at such an important site. I am confident that the results of the excavation will make a great contribution to our incomplete knowledge of the Chalcolithic Cultures in India, particularly South-eastern Rajasthan. They are likely to present an altogether new picture of the inter-relationship between different cultures.

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The large scale exploration in South-eastern Rajasthan, followed by the excavation at Gilund, equipped me with a first hand knowledge of the Black-and-Red Ware, which was gradually extending its arms to cover the entire length and breadth of the country. In this exploration I was in a position to distinguish the differences in the ceramic associated with at least two cultures viz., Chalcolithic of South-eastern Rajasthan and the Painted Grey Ware.

Not long after the excavation at Gilund, I was favoured with the privilege of being one of the members of the team which went to the United Arab Republic to salvage the antiquities from the area, which was to be submerged in the reservoir caused by the construction of Aswan Dam. The expedition of the Indian team was a sequel to the appeal made by Unesco to all its members. The Indian team, headed by Shri B.B. Lal, conducted excavation at two sites viz., Afyeh and Tumas. As many as one hundred and nineteen burials were opened at the latter site. Besides exhibiting close similarities with the Megalithic burials of South India, the graves also yielded Black-and-Red Ware. Though it will still be hazardous to proclaim any relationship between the two cultures, the Black-and-Red Ware found in a foreign country further augmented my knowledge. I studied the ceramic in the Cairo Museum as well.

The Black-and-Red Ware was no doubt studied by certain scholars, but it must be recorded that the study was restricted to a limited number of sites, with a view to corroborate one or the other pre-conceived theory. A dissertation was also prepared on the subject for Ph. D., but the greatest lacunae I could observe in the thesis was that the Megalithic Culture was not taken into consideration at all. I fail to make out the exact reasons for it. To the extent my imagination goes, the Megalithic Culture was kept beyond the scope of the thesis on account of the fact that, the same was considered to belong to historical period. If so, it will have to be admitted that the ground was not justified enough, because by the time the preparation of the thesis started, it was established beyond doubt that the date of the Megalithic Culture could be pushed back to at least 1000 B.C. In such circumstances, the declarations made by

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R.E.M. Wheeler, regarding the date of the Megalithic burials and the Black-and-Red Ware, should have been ignored, particularly in view of the confessions of Wheeler himself in the Brahmagiri report. The culture which brought the ceramic to light for the first time in India had a genuine claim for reference.

In the same strain of thought, I sometimes got restless by certain ideas of well known archaeologists. Firstly, the Indian archaeologists are very much reluctant to make any statement, which may clash with the views of foreign archaeologists. Secondly, the Indian archaeologists make vigorous efforts to prove the introduction of any culture by a foreign agency, on the basis of similarity in one trait or the other. It is high time that, we shed old beliefs and try to assess all cultures in proper perspective. We need not be led away by the opinion of the foreigners, because necessities of man could be common in any corner of the earth and the invention, as a sequel, need not always be prompted by a foreign agency. Thinking always in terms of colonization or introduction of certain traits by foreigners vitiates very often the desired approach and thereby correct conclusion. The scholars should always try to analyse all the facts in an unbiased manner and should not hesitate in expressing their independent opinion. Monopoly should not be allowed to influence the judgement and views of any scholar. Discoveries and inventions had never been a hierarchy of a particular age-group, community, caste, position etc.

In the present book assessment of all the cultural traits, taken as a whole, has been attempted. Though the main subject which has been dealt with in the book is the Black-and-Red Ware, the title of the book Community Movements in Proto-historic India based on the study of the Black-and-Red Ware has its own justification. Firstly, the Black-and-Red Ware is the only ceramic of the Proto-historic times in India which occurred in each and every part of the country. Secondly, the archaeologists had started a number of speculations in assuming certain well-known communities like Dravidians and Aryans to be responsible for introducing the ceramic in different parts of the country, by moving from one region to the other. While analysing

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various cultural contexts, in which the ceramic is represented, special emphasis has been laid on the shapes. The archaeologists have been clamouring that, the correct approach for a comparative study of the shapes was to draw all of them on the same scale. With the same objective in mind, all the shapes presented in this book have been drawn on half-scale. Various difficulties were encountered in this attempt. Firstly, the line drawings of the shapes from certain sites were not readily available. Secondly, they were not made available in the scale required by me. Both these factors entailed to undue delay in the completion of the book. Though according to convention a distinction should be made between the Megalithic Black-and-Red Ware and others by using capital B for the former, I have taken the liberty of using the capital letter in all the cases, because of the central theme of the book. I am confident, the scholars will not view it from any other angle.

Bringing out any book in a proper form has never been a single man's job. The author of the book always received assistance from others and this is the proper forum to acknowledge it. Shri P.M. Bhope, Draftsman of the Excavations Branch of the Archaeological Survey of India at Nagpur, took great pains in reducing or enlarging the line drawings, published in the reports, to bring them on the same scale. At a later stage the Photographers of the Museums Branch, particularly Shri Suprakash Roy readily assisted me in this job, besides reproducing the photographs of the Black-and-Red Ware printed in various books. Shri S.P. Nandi, Draftsman and Shri Tarun Ghosh, Artist of the Museums Branch, Calcutta prepared the plates of the line drawing in a most devoted manner and in a record minimum time. The map of India showing the principal Black-and-Red Ware sites was prepared by Shri Bashir Khan, formerly Draftsman in the Excavations Branch, Nagpur. To type out the manuscript is the most arduous job in publishing a book. Shri S.N. Mukherjee, Stenographer of the Museums Branch, Calcutta, however, did the job with all sincerity. I am beholden to all. I must express my indebtedness to Professor B.P. Sinha, Head of the Department of Ancient History, Culture and Archaeology, Patna University, for

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having agreed to write out the foreword of this book. Messrs. Agam Kala Prakashan deserve all appreciation and thanks for goading me to complete the book and printing the same in a record limited time.

K. M. Srivastava

Calcutta :
First January 1980

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I

Introduction

1. GENERAL

India is a vast country. A country of such an enormous size is bound to exhibit different cultural patterns influenced by the extraordinary variety of its physical features. Girdled by the lofty Himalayas in the north and Indian Ocean in the south on the one hand, the country has dripping hills of Assam to the waterless desert of Rajasthan on the other. Climatically, the west of Rajasthan is extremely arid, while in the east lies Cherapunji, one of the world's wettest part. Likewise, the winter temperatures are well below zero in parts of Kashmir, while Ganganagar in Rajasthan may have a temperature approximately 50 degrees centigrade in July, and in Cochin in the south, throughout the year, the temperature is in the vicinity of 30 degrees centigrade. There is hardly any country in the world, where the climatic contrast is more striking. India has an equally varied vegetation, contrasting on the one hand in the tropical monsoon forests with the alpine meadows of the Himalayas from the xerophytic desert vegetation in the marshy Sunderbans on the other. Influenced by the latitudinal and altitudinal difference, the floral wealth of the country is also marked by a large number of varieties. No less remarkable are the numerous races of mankind inhabiting this historic land and speaking numerous languages. The large number of languages—as many as 179 according to the linguistic survey—in India have always been cited to be a hindrance to Indian unity.

Divergent physiographic features of the country play a vital role in exhibiting various patterns of culture, each distinctive of its own

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region. Local conditions and resources have their own impact on characterizing the religious customs, manners, dietary habits, dress and objects of daily use. They are sometimes found to vary in details even when the regions are not widely separated from each other. Anyone travelling through the country will not fail to observe these cultural differences, many of which have great force and vitality. The variation is much more conspicuous between one regional frontier and the other. These changes are noticed not only in the country-side, but in the cities as well. Quite natural as it is, all geographical and cultural frontiers correspond with linguistic frontiers. The variations in manner and taste between any two major cultural blocks in India are as marked as those between any two major European countries.

The diversity amongst the inhabitants of India, though baffling in description, is a common place. However, the stream of the cultural unity underlying the basic pattern of Indian life cannot be lost sight of. India has developed such an incredibly complex culture with religion and agriculture at the base. Religion gives, or until very recently has given, a certain common tone to most of the sub-continent. Spate has very aptly remarked, "For millenia the Peninsula has been virtually a *cul-de-sac* into which peoples and cultures have infiltrated or been driven, retaining much of their ancient rules of life and yet ceaselessly reacting upon one another, and, for the most part, if not welded together, at least held together in the iron clasp of the caste system, a unique solution to the problems of plural society, which are in essence resolved by recognising, canalising, and in fact sanctifying the plurality. It is no exaggeration to say that among the peoples of India are groups at all levels of economic development from that of jungle-folk barely out of the Stone Age to that of monopoly capitalism, with a tinge at least of state planning".[1] He further said, "Underlying the life of India's one great common factor, expressed it is true in diverse modalities and degrees, the rhythm of the monsoonal year. The

1. O.H.K. Spate, India and Pakistan—A General and Regional Geography, London 1957, p. XXX.

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people of India are predominantly agrarian, and even most of the industrialization of today, like the great dynastic achievements of the past, is after all built upon the ancient foundation, the toil of the dwellers in 6,50,000 villages. The tapestries of their lives are wrought in various colours the lush green of the deltas, the drab khaki of the deserts—but nearly everywhere the fundamental lineaments of the patterns are similar, and controlled by the seasonal cycle in which the great bulk of the rainfall comes in the warmer half of the year : this is so whether the annual rainfall is 450 ins. on the Assam Plateau, or under 15 in. in the Punjab, the only really large exception being the Tamilnad coast in the S.E. There is also—away from mountains—a certain sameness in the regimes of temperature, annual or diurnal; but here, though we commonly think of India as 'tropical' it must be remembered that half of the area and over half of the population are N of the Tropic of Cancer".[1]

Indian society, therefore, constantly overwhelms western observers by its remarkable diversity out of which a unity has developed. Of course, it began with diversity on account of the array of geographical, climatic and attendant economic features, and that the first human inhabitants of India represented a number of races, whose origins, languages and basic cultures, were distinct from each other. Yet, the basic and original unity in its various manifestations are not less striking.

Community movements, in such a multi-lingual and multi-racial country, particularly in hoary past, have become a subject of lively discussion amongst the archaeologists during the last two to three decades. Greater emphasis has been laid upon the study of the subject in order to trace out the impact, conflict and mutual assimilation by different cultures, which were responsible both for the basic unity and the regional diversities in the sub-continent. However, while doing so, the archaeologists have frequently rushed to hasty conclusions, simply by taking into consideration the presence or

1. O.H.K. Spate, *Op. Cit.*, p. XXXII.

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absence of any particular antiquity in the milieu of different cultures. Ignoring completely the cultural traits as a whole, a single object has been taken to represent a community to proclaim a theory of movement from one region to the other. All the cultural traits may not be repeated because of lapse of time, but a majority of them must be present to justify the theory of movement of any particular community from one region to the other.

During the last twenty years a large number of sites have been excavated, almost in every part of India. Antiquities of various kind, in different stages of cultural development, yielded by the ancient sites as a result of excavations, have greatly enhanced our knowledge of India's hitherto unknown past. Amongst the sites excavated during the period, the number of Proto-historic sites is the largest. It has been so, because our knowledge of the Proto-historic period was very limited, if not negligible. The archaeologists were always on their feet to fill up the gap between the Indus Valley Civilization and the Buddhist Period, particularly after the partition of the country.

2. PROTO-HISTORY IN INDIA

The term 'Protohistory' is not very popular in foreign countries, though it has been widely used by the French scholars. They are of the opinion that the 'Prehistoric' Period comes to a close immediately after the birth of history. In certain parts of the world, like Egypt and Mesopotamia, history started as early as 3000 B.C. A large number of cultural groups, however, existed which had no writing of their own, though they had close relationship with the cultures of the historical period in Egypt and Mesopotamia. These societies could not be grouped under 'Prehistory' and at the same time it was not possible to give them the privilege of being studied under 'History'. With this background, the French scholars were forced to find a way out and use the term 'Proto-history'. Literally the word 'Proto' means, first in time, earliest, original, primitive etc. Hence, 'Proto-history' indicates the period immediately preceding the advent of 'History'.

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In the context of Indian Archaeology as well, the term 'Proto-history' has become very familiar, because it was not possible for the scholars to designate several cultural patterns, established by excavations at different sites in India, either as 'History' or 'Prehistory'. The invention of writing was very valuable for man in maintaining the records as also in communicating his ideas and achievements to his contemporaries as well as his successors. After the knowledge of writing, it became possible for him to write out the story of his achievements and hence the period has been given the name of 'History'. The period earlier than 'History' has been designated as 'Prehistory', because man at that time, being illiterate, had no media of communication. In India the historical period begins round about sixth century B.C., when two great religious teachers, Buddha and Mahavira preached their doctrines in the country. The same century is responsible for the organisation of large states and establishment of republics, which gave birth to a civilized life. Writing, in one form or the other, must have been invented at that very time, though the earliest written records so far available in the country are the edicts of the great Mauryan emperor Asoka in the third century B.C. If the division of the Periods in archaeological terms is restricted to 'History' and 'Prehistory', a very long period beginning with the time when man was nomadic down to the sixth century B.C., will have to be treated as 'Prehistory'. The designation of 'Prehistory' for the entire period will be far from justified in the context of India's past, because it will automatically lead to the simple conclusion that, writing was completely unknown in India till the beginning of the sixth century B.C.

It is well known that the authors of the Indus Valley Civilization, better known as Harappa Culture, were literate enough to practice writing, which has been preserved on their seals. They flourished in the north-western parts of India as long back as 2400 B.C. Inspite of serious attempts by various scholars, there is no unanimity on the reading of the script on the seals so far. This may not be possible also till a bilingual seal comes to light. When the people representing Harappa Culture knew the art of writing, they cannot be

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relegated to the category of 'Prehistory'. Satisfactory decipherment of their script is a question altogether different. Dr. Sankalia has very aptly remarked that it is not their fault if we cannot decipher their script.

The Harappa Culture, at the same time, is not entitled to the status of 'History', because the script is still unintelligible to us and hence not helpful in reconstructing the history of the past. Hence, Revered Father Heras was perfectly justified in using the term of Proto-history for the Indus Civilization. Besides the knowledge of writing, there are other reasons for labelling the people of Harappa Culture as 'Proto-history'. They were very much advanced in town and city planning, possessed a high sense of sanitation and had trade relations with foreign countries. We are also indebted to those people for many rituals and ways of life, which can be traced back to that time. Proto-history should also cover the bulk of Vedic literature, but any discussion on it will not be of great value as long as the cultural set up depicted in the literature is not supported by archaeological remains. The date of the literature has also not been established. The author has, therefore, taken 2400 B.C. as the beginning of the period of 'Proto-history' with the other end at sixth century B.C. Various Neolithic and Chalcolithic cultures of south, north and east India and the Painted Grey Ware culture of the Indo-Gangetic basin have been covered up within this span of time, though of course the earlier time bracket had to be pushed back on account of the recently dated sites of Koldihwa and Chirand.

3. IMPACT OF PHYSICAL ENVIRONMENT ON DISTRIBUTION OF CULTURES

Standing away from the trans-continental communication, the geographical isolation of India has allowed the country to maintain cultural stability. Panikkar has very correctly observed that, "History may well be conceived as the pressure of the nomad—both of the land and of the sea—against civilization. Those countries which stand directly in the way of these nomads are destroyed and broken up from time to time. Those that are protected by geography received

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a backwash and after a turmoil settled down again".[1] The cultural impact of a number of invasions on the country did not change the material culture basically because of her geographical position. Lying away from the main route and protected by the Himalayas, the force of the invaders frittered away by the time they could reach the mainland of India. This fact can be very well corroborated by the movement of Aryans, Huns, Mongols and the Turks. India's culture has been preserved for ages without being overwhelmed like the ancient civilizations of Egypt and Mesopotomia. The country has absorbed the cultural imprints of the foreign communities, without loosing her own identity.

Subba Rao while emphasising the importance of the natural conditions did not believe in the "sovereign influence of the environment". He was of the opinion that "idea" played a very positive role and said, "A rigid determinism cannot stand, as the 'idea' intervenes between 'man' and 'natural products', and as Febvre put it, the natural regions are areas of possibilities for human groups. Yet man cannot escape from his environment. The relation has been very well defined by Griffith Taylor.....Nature in large measure determines the plan, it is, of course, obvious that the man is the agent whereby the civilization progresses. He is of great importance, and as his technology improves, he develops a region further along the lines of the obvious plan.....In such exploitation, Nature determines the route of development, while Man determines the rate and the stage".[2] The impact of environment is obvious in the tropical and semi-tropical areas where the communities remained at a much lower level of cultural development. The same is true for the thickly forested areas, where even now the people have not advanced very much from the primitive way of Stone Age life. In the natural environment, availability of sufficient fertile land for agricultural purposes is the predominant factor.

The wide alluvial plains of the Indus and the Ganges worked as a melting pot for the fusion of the cultures brought by the foreign

1. K.M. Pannikkar, Geographical Factors in Indian History, Bombay 1955, pp. 5-6.
2. B. Subbarao, The Personality of India, Baroda 1958, p. 9.

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invaders or refugees with the indigenous ones. The long coastline of India, with favourable harbours, has also helped the country in having trade and cultural relations with the outside world. Excavations at different sites in Mesopotamia have yielded a numer of seals and other antiquities similar to those found at Indus Valley sites. They are very valuable evidence in tracing the cultural contacts, which India had with the west Asian countries in the past.

Subba Rao has in a very brilliant manner divided the physical environment of the country into three categories viz. (1) Areas of Attraction, (2) Areas of Relative Isolation, and (3) Areas of Isolation.[1] This division explains very well the different stages of cultural development, which we observe in different parts of the country at one and the same time. There are communities at every stage of development from long established cities to virtually independent group of hunters, living within a relatively short distance. Certain regions have advanced far more rapidly than others, and the more backward often preserve many features, which elsewhere belong to a distant past.

It may be observed that the embayments of the Indo-Gangetic wide alluvium extend further south against the Central Indian Plateau, characterized by ridges of hills, steep embankments of rivers and forests. Such physical features are also presented by the Chota Nagpur division of Bihar. The physical isolation of these regions have helped the inhabitants in maintaining their primitive character and way of life for a long time. Subba Rao has, therefore, labelled the regions as Areas of Isolation. In sharp opposition to the above areas, we find an altogether different picture in the important river basins which render a considerable area fertile and thereby attract people to colonize it. These rivers are Indus, Ganges, Yamuna, Tapti, Godavari, Krishna and Kaveri. The rich fertile land with a very favourable rainfall enable the people to have a surplus output by exploiting the agricultural potentiality. Surplus economy is a primary

1. B. Subbarao, *Op. Cit.*, p. 12.

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requisite for speedy development of any culture or civilization. These areas have, therefore, been called as "Areas of Attraction". In between the above two categories are the Areas of Relative Isolation, distinguished by their distance from the main current of the movement of people and cultures. Subba Rao said, "Accepting this fundamental concept of areas of attraction, relative isolation and isolation, the whole pattern of development of material culture in India may be defined as one of the horizontal expansion of the higher cultures, leading to a displacement, contraction, and isolation of the lower cultures, in different parts of the country, at different periods, and at different cultural levels. The divergence in the country is due to the difference in the cultural milieu of the first large scale agricultural communities in the different regions[1]".

Now, with the above broad-based division of the cultural regions, the physical features of the country may be examined. Flanked by the Aravallis on the east and the Sulaiman and Kirthar ranges on the west, we have the fertile region of Sind and Punjab watered by Indus and its tributaries. The well known Thar desert of Rajputana spreads towards the east and towards the south, we have Kathiawad and Kutch which are linked with the mainland by the great alluvial plain of Gujarat. It is a well known fact that the salt-marshes and bare and flat land of the Rann of Kutch are of recent origin. So far as the Thar desert is concerned, it is said that it was a sea during the Proto-historic period. This conclusion has been arrived at by the studies of one chemist Dr. Godbole who examined a number of samples from the borings in the well. During the course of the examination of the samples, sea salt was also found mixed up with surface salt that has been brought by the south-westerly winds. The analysis of Dr. Godbole is confirmed by some geologists, who feel that in earlier geological period, the Arabian sea extended as far east as the Vindhya hills, as a result of which beautiful formations of sandstone are seen in Central India. This theory is quite tempting to the archaeologists in view of the spread of the Indus Civilization

1. B. Subbarao, *Op. Cit.*, p. 12.

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in western Rajputana and Kathiawad. If it is proved, the archaeologists will have another evidence to establish the maritime trade and contact of the authors of the Indus Valley Civilization, better known as Harappa Culture, with West Asia. Rajputana is divided into two parts by the Aravallis, running in an obliquely south-west-north-east direction. The north-western part, a desert, is called Marwar, whereas the south-eastern part is Mewar. Watered by river Banas and its tributaries, Mewar is a fertile region.

Sheltered by the range of Aravallis near Delhi, the Gangetic basin spreads eastwards. The Vindhyan complex on which the alluvial soil of the Gangetic basin abuts lies to the south. Beyond the Vindhyas, Bengal is located in lower regions of the Gangetic basin. Watered by the rivers Chambal, Banas, Sipra, Narmada and Son, the important plateau of Malwa exists in a triangular shape bounded by the Aravallis on the west with the base formed by the Vindhyas running in an oblique manner. Towards the east, the region is separated by the sharply-defined scarp overlooking Bundelkhand. It includes in the south-east, the upper courses of river Ken and Betwa. South of the Vindhyas is Maharashtra, which may be taken to coincide with the main mass of the Deccan Lavas above the Ghats. The great basins of upper Godavari and Krishna drain this part of the country. Andhra Pradesh, which includes Telangana, is formed by the lower basins of Godavari and Krishna rivers. It is bordered on the east by the Eastern Ghats. The region north of Tungabhadra-Krishna rivers and west of the Eastern Hills is known as Telangana. The land of Karnataka or Mysore extends from the Deccan Lavas on the north to the land drained by river Kaveri. It is a rocky triangle between the Eastern and Western Ghats. A little over 1,29,500 kms. in area, the Tamil country, now coterminous with the State of Tamil Nadu, is in the shape of a quadrant, lying between the sea and the Deccan plateaus. Lying between the narrow coastal plain on either side of Palghat opening in the Western Ghats, Kerala is one of the most distinctive regions of India, both physically and culturally. The state of Orissa extends east of the Deccan Lavas and lie between the Maikal Range and Chota Nagpur in the north and

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the Orissa Hills to the South. The main river watering the state is Mahanadi.

The mountain ranges have always stood as physical barrier to the horizontal expansion of different cultures. However, the pockets in them have provided shelter to the primitives of backward tribes. Dividing the country right across from west to east is the Vindhyan complex, including the Satpuras, Mahadeo hills, Gawaligarh, Maikal range, Hazaribagh range, Chota-Nagpur, Singhbhum and Man, which are occupied by the tribal people like Bhils, Danga, Gonda, Santhals, Uraons, Baigas, Gadabas, Marias etc. In the south, lying almost perpendicular to the Aravallis, are the Sahyadris and the Western Ghats, which provide shelter to Bhils, Dangs, Worlis, Toda, Kurumbar, Kadar, Puliyan, Muthuvan etc. On the eastern fringe of the Vindhyan complex, the Eastern Ghats run almost parallel to the eastern coast and are inhabited by Savara, Baiga, Chenchu, Reddi, Irulas, Yenadis etc.

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II

Distribution of Cultures and their Authors

'A'—Various Proto-historic Cultures in India

I. HARAPPA CULTURE

After the delineation of various environmental regions in India, the plotting of the spread of different ancient cultures in relation to these regions will not be very difficult. In the north-west the Indus basin has become famous in the world for nourishing one of the largest of its three most well known ancient civilizations. At first the civilization was named after the main river as Indus Valley Civilization, but subsequently the archaeologists were inclined to label any culture after the site, where it was first discovered. Hence, Harappa being the site where it first came to light, the civilization came to be known popularly as Harappa Culture. Besides making India one amongst the three most ancient centres of civilization, the discovery of Harappa Culture pushed back the beginnings of civilization in the country by about two thousand years. For a considerably long time it was believed that, the horizon of this advanced culture was confined to the limits of river Indus and its tributaries, which became a territory of Pakistan after partition. Explorations during the last two decades by the Indian archaeologists have brought to light a large number of sites in Indian territory, where the well-known Harappa Culture is represented. With the discovery of new sites, it has been proved that the limits of the Culture extended in several directions. In the east it spread upto Uttar Pradesh through Punjab and Haryana; in the south as far as Gujarat, Kathiawad and Kutch; and north-western Rajasthan in the south-east.

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Some of the important sites, discovered within this horizon, are Alamgirpur in District Meerut of Uttar Pradesh, Rupar in District Ambala of Punjab; Lothal in District Ahmadabad and Rojdi in District Rajkot of Gujarat, and Kalibangan in District Ganganagar of Rajasthan. The most interesting element, altogether new in the Harappa Culture, is the occurrence of a ceramic, Black-and-Red Ware, at the sites in Gujarat and Kathiawad.

That the culture was very much advanced is established by the remains found at the ancient sites. The towns and cities present a picture of mature planning. They were divided into regular sectors and the streets connecting them were well aligned. The houses and public buildings were all oriented according to the lay out of the streets.

The main streets followed the cardinal directions and were intersected at right angles by other roads. There was a businesslike efficiency as shown by the standardised layout of the workers' quarter. The authors of the Culture possessed a highly developed sense of sanitation as revealed by the elaborate drainage system, consisting of horizontal and vertical drains, street drains, soakpits etc. The discovery of Indus seals at some of the sites in Bahrain islands and Persian Gulf seal at Lothal has proved that the Harappans had trade relations with west Asia. What strikes the eye most is the cultural uniformity in almost all respects, like well-aligned brick houses, sanitation, pottery, seals, ornaments, weights and measures and the method of the disposal of the dead. It has been presumed that a regular agency, may be in the form of a government or municipality, must have been in existence to bind the citizens by well spelt out rules and regulations. The culture flourished between 2450 and 1750 B.C.

II. CHALCOLITHIC CULTURES OF SOUTH-EASTERN RAJASTHAN AND MALWA

A later contemporary of Harappa culture is the Ahar Culture, which spread mainly in South-eastern Rajasthan, sheltered by the Aravallis and watered by Banas and its tributaries. This Culture

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was first brought to light by R.C. Agrawala at the site of Ahar near Udaipur railway station on the left bank of river Ahar in the year 1954-55. The most characteristic feature of this Culture is a typical pottery known as the painted Black-and-Red or Black-and-Cream. Since the discovery of Ahar, a large number of sites, exhibiting the same features, have been brought to light. Though the centre of this Culture was south-eastern Rajasthan comprising the Districts of Udaipur, Chitorgarh and Bhilwara, it also extended upto Nagda located on river Chambal in District Ujjain of Madhya Pradesh in the north-east and Navdatoli on Narmada in the south. Kayatha on river Kali Sindh in District Ujjain and Eran on river Bina in Sagar District, both in Madhya Pradesh, are the other sites with similar characteristics. The fundamental difference amongst all these sites is the variation in the quantity of Black-and-Red Ware. The Black-and-Red Ware constituted one of the chief ceramic industry at Ahar, whereas at other sites, but for Kayatha, it occupied an insignificant position. It is strange that the present site of Ahar has yielded very little stone tools, when they are found at other sites in the region in abundance. The inhabitants of the region manufactured their tools from copper, found in plenty in the surrounding areas of Ahar. The culture may be assigned a date between *c.* 2000 and 800 B.C.

III. NEOLITHIC-CHALCOLITHIC CULTURES OF EASTERN INDIA

Almost contemporary to the cultures described above, we have the recently discovered Neolithic and Chalcolithic Cultures of Eastern India, which flourished in the eastern Gangetic basin. The discovery of a Neolithic Culture at Chirand in District Saran of Bihar is outstanding, on account of many new features occurring together. Such a large variety of bone tools, polished stone axes, pottery, beads, terracottas and other antiquities have not so far been reported from any other Neolithic site in India. The Neolithic Culture was succeeded by a Chalcolithic one. Another important site in the region is Pandu-Rajar-Dhibi in District Burdwan of West-Bengal, where the earlier Neolithic Culture of Chirand is absent. The earliest occupation

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of Pandu-Rajar-Dhibi started with the Chalcolithic Period. The Chalcolithic Culture spread further to Birbhum District of West Bengal. Further exploration in the region is likely to bring to light sites with both Neolithic and Chalcolithic occupations, because Neolithic sites are not wanting in West Bengal. The Black-and-Red Ware has been reported from all the above mentioned sites and the earliest date assigned to it is at least 3000 B.C. at Chirand.

IV. THE PAINTED GREY WARE CULTURE

In the Proto-historic period, the western Gangetic and Yamuna basins and the north-western Rajasthan were occupied by a Culture known as the 'Painted Grey Ware Culture'. The Culture owes its name to a well-defined pottery, light grey in colour, painted in black designs. The typical pottery was first reported from Ahichchhatra in District Bareilly of Uttar Pradesh long back, but unfortunately due importance was not attached to it at that time. The real significance of the Culture represented by the pottery was realized, when it was found in early contexts at many sites like Rupar in District Ambala of Punjab, Purana Qila (New Delhi), Hastinapur, Mathura, Atranjikhera and Sravasti etc. in Uttar Pradesh. A few sherds of the Painted Grey Ware were also reported from Ujjain in Madhya Pradesh, Chosla and Gondi in Ajmer and Jaipur Districts respectively of Rajasthan. A solitary sherd, found on the surface at Gilund in Udaipur District of Rajasthan, is quite interesting. Small settlements of the Culture have also been spotted in North-western Rajasthan. The Black-and-Red Ware happened to occur in a very restricted quantity with the Painted Grey Ware. The earliest date, which could be assigned to the Painted Grey Ware, is about 1100 B.C., as established by the excavations at Atranjikhera in District Etah of Uttar Pradesh.

V. THE NEOLITHIC-CHALCOLITHIC CULTURES OF THE DECCAN

The Neolithic-Chalcolithic Cultures of Tapti and its affluent valleys and upper reaches of Krishna and Godavari have brought to light another set of sites not very much different from Malwa. The

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Chalcolithic people found the dry-deciduous areas of Central Deccan with black cotton soil and granatoid hills with basalt and dolerite dykes to be very suitable for practising primitive agriculture and pasturage. Amongst the important sites representing the Chalcolithic Culture of this region, mention may be made of Prakash in District Dhulia, Bahal and Tekwada in District Jalgaon and Daimabad in District Ahmadnagar and Inamgaon in District Pune, all in Maharashtra. This Culture spread widely to the south and occupied the Mysore plateau and upper course of river Krishna excluding the coastal region of Eastern Ghats. All the sites representing this Culture have yielded a painted black-on-red and Black-and-Red Ware alongwith the microlithic blade of the crested guiding ridge facies in association with copper. The Chalcolithic Culture represented in this region is very interesting to study the inter-relationship with and development of Megalithic Culture of South India. Tekwada opposite Bahal is the most important site in this respect, because we come across both the Chalcolithic Culture as well as Megaliths at one and the same place. It must, however, be made clear that iron, a very important cultural constituent of Megalithic Culture in South India, is conspicuous by its absence at Tekwada. The beginnings of the Chalcolithic Culture in this region may be dated back to 1700 B.C.

VI. THE MEGALITHIC CULTURE

Starting with a Neolithic background, we have in the extreme south of India, the Megalithic Culture with its characteristic burials and iron implements. The Gneissic and Metamorphic areas of Central Deccan watered by the lower Krishna and Godavari rivers were found by the Neolithic communities to be very favourable for their settlements. The most striking feature in the Neolithic occupation of the area is the occurrence of the black-on-red painted pottery, almost similar to that found at the Chalcolithic sites of Tapti-Purna valleys, with the painted sherds of the Black-and-Red Ware and a microlithic blade industry. The Neolithic communities were succeeded by the Megalithic people, when the Black-and-Red Ware developed into a predominant ceramic industry. The Megalithic people had a burial complex, varying from simple pit and urn to the

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most elaborate cists and circles with orthostats and clinostats. The common feature in all the burials is the typical Black-and-Red pottery. At first it was believed that the Megalithic people were the authors of the Black-and-Red Ware and the ceramic was confined to South India only, but the recent excavations have proved that, it was widely used by different communities in different parts of India in the Proto-historic Period. Besides the extreme south of the country, the Megalithic people also occupied the coastal areas of the east.

'B'—Authors of Various Proto-Historic Cultures in India

I. HARAPPA CULTURE

Before discussing the complicated problem of tracing out the communities or the group of people, who were responsible for the introduction of different proto-historic cultures in India, it must be admitted frankly that so far no serious attempt has been made by the archaeologists in this direction. Sporadic attempts by them have simply been to establish their pre-conceived theories. While dealing with the authorship of Indus Civilization, Marshall said, "For, placed as Sind is on the western fringe of India, with easy land and sea communications along the southern coasts of Western Asia, and with the great mountain zone all but overshadowing it on the north, it can hardly have failed, even at this early age, to have been the meeting ground, as Mesopotamia also was, of widely divergent types of humanity of Proto-Australoids from the Indian sub-continent, of Mediterraneans from along the southern shores of Asia, and of Alpines and Mongoloid-Alpines whose habitat was in the mountain zones respectively of Western and Eastern Asia".[1] The above statement, made on the basis of the human skeletal remains found at Harappa and Mohenjodaro, shows that the population was heterogeneous and comprised at least four different racial types. Marshall has advanced various arguments to prove that the Indus Valley Civilization was quite distinct from, and earlier than, the Vedic Civilization. A majority of the scholars carry the opinion that the authors of the

1. J. Marshall, Mohenjodaro and Indus Civilization, Vol. I, London, 1931, p. 108.

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Indus Valley Civilization were the 'Dravidian' speaking people, who moved to South India after being displaced from the original settlements. Besides 'Dravidians', various other communities like Brahuis, Sumerians, Panis, Asuras, Vratyas, Vahikas, Dasas, Nagas etc., have been declared to be the authors of Indus Valley Civilization by different scholars. According to Mortimer Wheeler a pre-Aryan community brought the Indus Valley Civilization into existence and he tried to establish it in a most dramatic manner. He assumed that the Civilization was not non-violent as believed by Marshall. The pre-Aryans were ruthlessly destroyed by the invading Aryans. In order to authenticate his view he took the large number of skeletons found at Mohenjodaro in a helter skelter manner as the scene of final massacre of pre-Aryans. For the Aryans, he quoted widely from the Rigveda and said, "In the Rigveda, the invasion constantly assumes the form of onslaught upon the walled cities of the aborigines. For these cities, the term used is '*pur*', meaning a rampart 'fort', 'stronghold'. One is called 'broad' (*Prithvi*) and the other 'wide' (*urvi*). Sometimes strongholds are referred to metaphorically as 'of' metal (*ayasi*), 'Autumnal' (*Saradi*) forts are also named. 'This may refer to the forts in that season being occupied against Aryan attacks or against inundation caused by over flowing rivers'. 'Forts' with a hundred walls (*Satabhuji*) are mentioned. The citadel may be of stone (*asmamayi*) alternatively, the use of mud-bricks is perhaps alluded to by the epithet *ama* (*raw, unbaked*). Indra, the Aryan war-god is *purandara*, 'fort-destroyer'. He shatters 'ninety forts' for his Aryan protege, Divodasa. The same forts are doubtless referred to where in other hymns he demolishes variously ninetynine and a hundred 'ancient castles' of the aboriginal leader Sambara. In brief, he 'rends forts as age consumes a garment".[1]

In the recent past certain scholars have started believing that the authors of the Indus Valley Civilization were the Aryans themselves. T.N. Ramachandran in his presidential addess of the Ancient India Section at the All India History Congress held at Agra in December,

1. R.E.M. Wheeler, Ancient India No. 3, New Delhi, 1947, p. 82.

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1956 pleaded powerfully to identify the Indus Valley Civilization with the Aryans. By drawing parallels between various excavated objects from Harappa and Mohenjodaro with those mentioned in the Vedic literature, K.N. Sastri has tried hard to establish in his book 'New Light on the Indus Civilization', that the Aryans, who are considered to be responsible for the Vedic literature, were the authors of the Indus Civilization. In order to prove the Aryan origin of the Indus Civilization, he has laid greatest emphasis on the cult of Siva-Pasupati, which to all appearance, was popular among the people of that Civilization. Rao has advanced further evidences to prove the Aryan authorship and has said, "The evidence of fire-worship and animal sacrifice noted at Lothal supports the view that certain religious rites evolved by the Rigvedic Aryans had already existed in India before their arrival. Other Aryan elements noticed in the Harappa Culture are the knowledge of the horse and the use of rice. Perhaps even the chariot was known to the Harappans, as attested to by the presence of cart-wheels marked with spokes. The anthropological, archaeological and linguistic evidences adduced above are impressive enough to show that within the Indus Empire there lived a group of people whose religious rites and social customs were not very much different from those of the early Aryans whom the Rigvedic Aryans designated as Asuras or Dasyus".[1] Ghosh has done a pioneering work in tracing out the authorship of the Harappa Culture. While discussing the authors and origin of the Culture he remarkably pointed out, "With no known beginnings the Harappa Culture reveals itself to us in a fully developed form. This itself lends to it a peculiar romantic charm; while death from unidentified causes is understandable, natural birth is an unnatural phenomenon. The earlier speculation on its west-Asian origin have been discarded in view of its strongly individualistic features though the inspiration for city life from that direction has been thought likely".[2] After discussing a large number of similarities and dissimilarities between various cultures of Rajasthan, Sind, Punjab and Baluchistan, he felt that it was the inspiration drawn

1. S.R. Rao, Lothal and The Indus Civilization, Bombay, 1973, p. 159.
2. Indian Prehistory, Poona, 1965, p. 117.

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by the inteligence of the local Sothi people from West Asia which gave birth to the mature Harappa Culture. In deriving the conclusion he expressed in a beautiful manner that, "Let us visualise a set of people with a receptive mind, perhaps led by a few genius dictators, bent on all-round improvement over existing conditions. Let us further assume that they borrowed the idea of cities from the contemporary Sumerians and established cities of their own with a superior planning, may be with the intention of outdoing the Sumerians. To gain prosperity they would promote trade with west Asia, and this would make them realise the need for standardization, which they would give effect to in all directions. Over the existing foundations in the rich river-plains would their ideas give rise to large cities controlled by an inflexible authoritarianism. Within a limited population and under strong leadership, all such changes, vast as they are, could easily take place within a generation or two. Such a set of ebbulient people need not have been colonizers from outside, falling upon, over-powering and destroying the local people. It might have been the local people themselves working up to new ideas and working them out vigorously. And seeing the obvious advantages of the emerging order, their kindred far and near would soon align themselves to the march of progress. Thus would be born a people with a new ethos".[1] To give further emphasis to his views he quoted the anthropological analysis of Sarkar and said, "Very important is the conclusion that so far as cephalic index is concerned, the Harappan people of Mohenjodaro have similarities with the present day people of Sind, those of Harappa with the people of Punjab and those of Lothal with the people of Gujarat. This if true, is a complete blow to any idea of a homogenous Harappan people : it can only mean that the Harappa Culture was adopted by the local people at different centres".[2]

The opinion of Walter A. Fairservis Jr. was almost on the same lines as that of Ghosh. He said, "On the present evidence, the

1. Indian Prehistory, Poona, 1965, p. 117.
2. *Ibid.*

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Harappan Civilization cannot be said to have originated through direct or even stimulus contact with Mesopotamia, even though civilization is earlier in the latter region. The evidence strongly suggests that a concentration of developed village settlements in the highlands of the Indo-Iranian Borderlands provided interactions that made for a constantly improving and intensified method of using local soil and water resources as well as advancing technology and creating social and political institutions necessary for civilized beginnings. The construction of dams and, with these, the fullest use of available land, the use of cattle for ploughing, the development of a mutually intelligible system of signs and symbols, the creation of local surpluses, which provided for the support of professional craftsmen, the institutionalizing of religious forms, and the development of domesticated animal breeds adopted to the ecology of the Borderlands (example : *Bos indicus*) are suggested as significant pre-Harappan advances in the highlands of the Borderlands. Essentially highland village cultures were the first to move into the Indus River Valley itself in Pre-Harappan times".[1] Emphasising his view point further he remarked, "It seems clear that the natural soil and water advantages of the Indus Valley made this florescence possible, *i.e.*, the amplification of institutions already established. For example, a richer return per acre planted resulted in larger surpluses which in turn supported greater populations and permitted an elaboration of non-farming specializations. Thus the village priest became a priesthood, the metallurgist became one of many, as did the potter, weaver, seal cutter, and the like. More private buildings and larger public buildings were mandatory in such a situation. The use of fired brick instead of mudbrick in building foundations may have been a response to the challenge of the flood potential of the Indus Valley. Village silos became urban granaries. Village ablutions and dances became temple rites. In effect, these elaborations had been motivated at the village level and given foundation for development

1. Walter A. Fairservis, Jr., *Noviates*, No. 2302, 1967, American Museum of Natural History, New York, pp. 1-48.

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in the endless potential of one of the richest alluvial tracts on earth".[1]

II. CHALCOLITHIC CULTURES OF SOUTH-EASTERN RAJASTHAN AND MALWA

Now, the group of people who introduced the Ahar culture, a later contemporary of Indus Civilization should be discussed. It has already been pointed out that the Banas Culture emerged sometime between 2000 and 1800 B.C., which means that the end of the Harappans and the Black-and-Red Ware Culture of Banas are coeval. Agrawal said, "The closeness of Banas culture (type-sites Gilund and Ahar) both in time and space to Harappans are a significant pointer to the probability of their contact. Now Desalpur excavations have actually established this contact".[2] He has observed two strains in the Banas culture viz. (*i*) Western Asiatic and (*ii*) Harappan. By comparing various excavated materials from Ahar, Gilund and Desalpur with those from the Harappan sites, he tried to establish that the people of Banas Culture employed the existing craftsmen of Harappa Culture. Further, in order to equate the Culture with Aryans he said, "If they (Banasians) came from Western Asia, as some of their pottery shows, and if they adopted Harappan traits, the circumstantial evidence becomes very strong that they themselves were responsible for the final collapse of the Harappans, though there may be other inherent reasons for the decline of the latter people. Affinities with Troy and Anau strengthen the circumstantial evidence for this Aryan equation. Banas Culture possibly represents the first attempts at settlement by these nomadic people in India".[3] In support of his theory, Agrawal has accepted the view of Grierson and Piggot that there were two distinct waves of Aryan migration. Soundararajan, however, believed that the Banas Culture, represented mainly by the Black-and-Red Ware, owed its origin to 'Dravidians'.

1. Walter A. Fairservis, Jr., *op. cit.*
2. D. P. Agrawal, C14 Dates, Banas Culture and the Aryans, Current Science, March 5, 1966, pp. 114-17.
3. *Ibid.*

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He said, "The present day disposition of the 'Dravidian' communities in India and the viscissitudes they have been taken as having gone through in early times indicate that at one stage they were widely distributed over many parts of Central India and Rajasthan".[1] Subbarao was of the opinion that the Central Indian Chalcolithic Cultures, in the present state of our knowledge can represent Aryans, Dravidians or both mixed up. While discussing various theories, he was tempted to observe Dravidian elements in the Central Indian Chalcolithic Cultures. He said, "The Central Indian Chalcolithic Cultures, though not genetically, are related to the Harappans as well as certain new elements coming from Iran in the second half of the second millenium B.C."[2] He noted in this context that, "Pargiters' identifications, of Manavas with Dravidians attains some significance."[3] Pronouncing Aryans, on the other hand, to be parents of the Proto-historic Cultures in India he said, "In the light of the recent evidence of Archaeology and the strong mutual influences with each other, the large scale colonization of Central India and the Deccan might represent the movement of a branch of Aryans who absorbed and mixed sufficiently with the pre-Aryan people of the Indus basin".[4] Regarding the Proto-historic inhabitants of Ahar, Sankalia said, "So it would not be quite strange if some folk movement from western Asia, starting in about 2000 B.C., had reached South-eastern Rajasthan".[5] He arrived at the conclusion by observing similarities between the excavated objects from Ahar and some sites in Western Asia. While emphasising his view point he further said "So at the most we may postulate some folk movements from Western Asia to the east, which gathered some traits here and some traits there on the way, and introduced them in the various regions they occupied in

1. K.V. Soundararajan, Community Movements in Proto-historic India—An Archaeological Perspective, Journal of the Oriental Institute, Vol. XII, No. 1, Sept. 1962, p. 74.
2. B. Subbarao, *Op. Cit.*, p. 170.
3. *Ibid.*
4. *Ibid.*
5. H.D. Sankalia, Excavations at Ahar (Tambavati), Poona, 1969, p. 223.

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India. These folks must be consisting of various distinct ethnic groups, which I think are reflected in such pottery groups as Ahar, Navdatoli (Malwa) and Painted Grey Ware".[1] Sankalia, however, was not very certain whether the Aharians were indigenous or foreign-oriented. He attempted to correlate the Proto-historic inhabitants of Ahar with ancient communities and said, "Going a step further, one might identify the Aharians with one of the Yadava families mentioned in the Puranas. But in the absence of written evidence these are all speculations".[2] The culture represented at Ahar cannot be treated in isolation from the Central Indian Chalcolithic Cultures brought to light at Navdatoli, Eran etc. Sankalia observed in these Cultures "Aryan or Puranic tribes, for instance, the Haihayas, with a number of their family members' names ending in *Asva*, and Haihaya itself meaning a 'horse' or horse riders settling down in the Narmada valley. Or else, these could be the aboriginal tribes-Nagas, pre-historic Andhras, Pulindas, Nisadas and Savaras".[3]

III. NEOLITHIC-CHALCOLITHIC CULTURES OF EASTERN INDIA

Eastern Gangetic basin has rather been unfortunate in not receiving the attention it deserved at the hands of the archaeologists. The Neolithic and Chalcolithic Cultures of this part of the country have, therefore, not been studied in detail. As long as a greater number of sites are not subjected to excavation, the picture will continue to be dark. The archaeologists have not attempted so far, to correlate the Neolithic and Chalcolithic Cultures recently discovered at Chirand. For the Chalcolithic Culture at Pandu-Rajar-Dhibi in Ajay valley, Sankalia felt that Savaras, a Pre-Aryan tribe, might be responsible.[4] The first wave of the Aryans, who colonized the Banas Valley, is thought by Agrawal to have moved to Bihar via Central India and West Bengal. He felt that, since West Bengal was covered by thick

1. H.D. Sankalia, Excavations at Ahar (Tambavati), Poona 1969, p. 223.
2. *Ibid.*, p. 224.
3. H.D. Sankalia, Excavations at Maheshwar and Navdatoli, 1952-53, Poona 1958, p. 252.
4. Indian Prehistory, Poona, p. 223.

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forests, the movement further east was not possible. Hence, the wave turned towards west in Bihar and further reached eastern Uttar Pradesh. This theory has been proved to be baseless by the recent discoveries and their earlier dates at Chirand.

IV. THE PAINTED GREY WARE CULTURE

The association of the Painted Grey Ware Culture with the traditional sites mentioned in Mahabharata is significant. Lal for the first time attributed the Painted Grey Ware Culture to Early Aryans. He said, "As will be seen below, there is a likelihood of the Painted Grey Ware having been associated with the Aryans during their early days in India".[1] Having taken into consideration the date of the Boghazkoi inscription (fourteenth century B.C.), he believed that the Aryan speaking people must have reached the Ghaggar and Sutlej Valleys during the following couple of centuries. The Painted Grey Ware, which has been reported from the Ghaggar and Sutlej Valleys also, in addition to the Indo-Gangetic *doab*, has been dated to eleventh-twelfth centuries B.C. Hence, Lal was rightly tempted in declaring that the Painted Grey Ware Culture represented the Aryans in India. While attributing the Painted Grey Ware Culture to Early Aryans, he said with confidence, "That the people who appeared in the Ghaggar-Sutlej Valleys in a post-Harappan context, a period which synchronizes with the arrival of the Aryan-speaking people in that area, as per literary and inscriptional evidence cited above, used the Painted Grey Ware",[2] The views of Lal have been accepted by Sankalia who said, "But one might go a step further and equate these Aryans with one of the tribes of the Aryans viz., the Bharatas who occupied the Ganga-Yamuna Valley."[3] Now, there is hardly any difference of opinion, amongst the archaeologists on the relationship of the Painted Grey Ware with the Aryans. A few scholars like Piggot, Wheeler and Agrawal, have discerned two distinct waves of

1. Ancient India, Nos. 10 and 11, New Delhi, p. 147.
2. *Ibid.*, pp. 150-151.
3. H.D. Sankalia, Prehistory and Protohistory in India and Pakistan, Bombay, 1962, p. 279.

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Aryan migration simply to associate the Painted Grey Ware people with the second wave.

V. THE NEOLITHIC-CHALCOLITHIC CULTURES OF THE DECCAN

The Neolithic-Chalcolithic Cultures of Tapti and affluent valleys and upper reaches of Krishna and Godavari have their own distinguishing features. Though within the last two decades not inconsiderable work, bearing directly or indirectly, on these cultures has been done, the archaeologists are still far removed from any consensus on their authors. Serious attempts have been made by Sankalia in this direction, but the problem will remain locked in semi-darkness, if not complete, as long as a large number of such sites are not subjected to large scale horizontal excavation. Sankalia felt that the Chalcolithic Cultures of this region may be the product of pre-Aryans.[1] Neolithic Cultures on the southern fringe like those excavated at Piklihal, Tekkalkota etc., might owe their origin to aboriginal tribes like the Boyas who are even today in a semi-hunting stage.[2] Allchin was not at all justified in assigning the label of Aryan or Dravidian to the people on the basis of a single skull from Piklihal.[3]

VI. THE MEGALITHIC CULTURE

Though the excavation of Megalithic burials started in India very early, no effort to place the Megalithic Culture within a defined chronological horizon was made till 1947. The scholars, however, started speculating on the authors of the Megalithic Culture right from the very beginning. The European scholars in the beginning tried hard to connect the authorship of the Megalithic folk with Celto-Druids or Celto-Scythians. After examining the skeletal remains from Brahmagiri, Sarkar came to the conclusion that the Megalithic people had no connection with Australoid or Indo-Aryan tribe.

1. H.D. Sankalia, Prehistory and Protohistory of India and Pakistan, Poona, 1974, p. 557.
2. Indian Prehistory, Poona, 1965, p. 223.
3. F.R. Allchin, Piklihal Excavations, Hyderabad, 1960.

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According to him they were probably of Scytho-Iranian Stock.[1] Gupta and Datta declared on the basis of the skulls from Yelleswaram that the Megalith builders were of Scytho-Iranian origin.[2] According to Guha the crania from Adichanallur were similar to skulls from Sialkot in North India and also the crania from Ceylon.[3] Rivett Carnac indicated a central Asian parentage on the basis of snaffle bits and stirrups yielded by the Megaliths, because according to him no ancient wild tribe in India used horses.[4]

The confinement of the Megalithic Culture to South India and its coincidence with the distribution of the Dravidian languages led Prof. Haimendorf to conclude that the Megalithic builders were Dravidians. He propounded a very interesting theory by suggesting that the Megalith-builders came from the Mediterranean region and entered South India in about 500 B.C. They spread northwards and ousted the earlier Neolithic and Microlithic people. He further felt on the basis of the distribution of the Megaliths that the Megalithic folk must have introduced the Dravidian language in the region.[5] After studying the skulls recovered from the excavation at Adichannallur, Zuckerman also derived the conclusion that the Megalithic people were Dravidians.[6] Sarkar also thought that the Megalith builders of India were Dravidians.[7] D.H. Gordon came out with the view that the Megalithic Culture reached peninsular India by sea through Arabia.[8] Wheeler looked to Karachi as the source of the Megaliths in South India on account of a few sites discovered nearby. He also advocated the existence of two cultural streams in the

1. S.S. Sarkar, Human Skeletal Remains from Brahmagiri, Bulletin of Department of Anthropology, IX (1960), pp. 5-26.
2. P. Gupta and P.C. Dutta, Human Remains Excavated from Megaliths at Yelleswaram, Man in India, Vol. 42, No. 1, 1962, pp. 19ff.
3. Guha, Proceedings of Indian Science Congress, 1926, p. 307.
4. Rivett Carnac, Proceedings of Asiatic Society of Bengal, 1879, p. 11.
5. Haimendorf, Indo Asian Culture II, No. 3, Jan. 1954, p. 238ff.
6. S. Zuckerman, The Adichanallur Skulls, Bulletin Madras Government Museum, N.S., General Section, Part II, 1930, pp. 19-20.
7. S.S. Sarkar, Man in India, XXXV (1955), pp. 31-38.
8. D.H. Gordon, Prehistoric Background of Indian Culture, Bombay, 1958, p. 18.

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Megalithic Culture of India; one from the northern plains with iron and the other from Central India with the Black-and-Red Ware.[1] Childe considered the Mediterranean region to be the birth place of Megaliths and said, "In any case the early centres of megalithic architecture in Europe all lie near the coasts of the Mediterranean, the Atlantic and the North Sea.....and by sea, the dolmen and the posthole should have reached the Indian Peninsula too"[2]. Heine Geldern felt that Megalithic Culture moved through Central Asia.[3] Walter Ruben also held almost similar views and expressed that the Megalithic trait entered India from Palestine via Persia.[4] Yazdani observed a migration of the Megalithic Culture from the Makran coast, where the practice of Megalithic burial was in vogue.[5] N.R. Banerjee considered it not unlikely that the Megalithic Culture came into India from Iran.[6] Banerjee associated the Megalithic people further with the Dravidian speakers and said, "There can be no doubt, therefore, that the megalithic mode of disposal of the dead in South India was associated with the Dravidian speakers, who appear to have entered into South India considerably earlier than Asoka."[7] Allchin traced out several cultural strains amongst the Megalith builders of India and said, "The South Indian graves appear as a developing complex with several streams of influence combining in them. First, some grave types are reminiscent of those of Central Asia, Iran or the Caucasus, and could well represent traits brought from these areas by Indo-European speaking immigrants. Next, some appear as developments of the indigenous Neolithic-Chalco-

1. R.E.M. Wheeler, Early India and Pakistan, London 1959, p, 168.
2. Gordon Childe, Megaliths, Ancient India No. 4, New Delhi, pp. 10-18.
3. R. Heine Geldern, *Das Megalith Problem, Beitraege Oesterrich Zur Erforschung der Vergangenheit und Kulturgeschichte der Menschheit Symposium* 1958 under the auspices of Wenner—Gren Foundation, New York, 1959, pp. 179ff.
4. Walter Ruben, *Eisenschmiede und Daemonen in Indian, Internationales Archiv fuer Ethnographe*, Band XXXVII, Supplement, Leyden 1939, pp. 154-158.
5. Yazdani, Journal of the Hyderabad Archaeological Society, 1917, pp. 56-79.
6. N.R. Banerjee, The Iron Age in India, Delhi, 1965, p. 48.
7. *Ibid.*, p. 60.

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lithic burial customs of the Deccan. A third series points to the influences from outside India, and comparable types may indicate the source of the influences.....
Strictly speaking not all these examples are dated with any precision, and, therefore, they scarcely provide a firm basis for comparisons; but they suggest that during the first millenium B.C. India received them as influences by dint of maritime contacts with the Middle East. A fourth stream also cannot be excluded, being the possibility of local development in peninsular India itself; the stone alignments appear to belong to this class".[1]

1. F.R. Allchin, The Birth of Indian Civilization, Penguin books, 1968, pp. 239-240.

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III

The Black and Red Ware

GENERAL

During the last two decades a group of pottery well-known as the Black-and-Red Ware has been attracting the attention of both Indian and foreign archaeologists. The pottery is so called, because it has a characteristically black interior and black-and-red or black-and-grey exterior with the black confined to the upper part of the vessel. Amongst the factors responsible for its growing recognition, the wide distribution, both in space and time, is the most important. The ceramic occurs at many sites in India from Rupar (District Ambala, Punjab) in the north to Adichannallur (District Tirunveli, Tamil Nadu) in the South and from Amra and Lakhabawal (District Jamnagar, Gujarat) in the West to Pandu-Rajar-Dhibi (District Burdwan, West Bengal) in the East. The span of time is also equally wide and ranges between 2400 B.C. to the early centuries of the Christian era.[1]

A little more than one hundred and fifty years ago, Megalithic burials were noticed for the first time in Kerala by Babington. Ever since, a large number of sites with Megalithic burials have been discovered by archaeologists in South India. Frequent reports on the Megalithic burials in South India maintained a very good pace with their discovery in hundreds. However, instead of undertaking any excavation on scientific lines, the Megaliths were rather ransacked by amateur archaeologists in the last century. The beginning of the

1. Recently the date of Black-and-Red Ware has been pushed back to at least 4500 B.C. at Koldihwa in District Allahabad of Uttar Pradesh.

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study of the Black-and-Red Ware is closely linked with the Megalithic burials. Each and every Megalithic burial invariably yielded the Black-and-Red Ware, which led the archaeologists to call it by the name of Megalithic Ware. Inspite of the abundance of the Megalithic burials and the Black-and-Red Ware appended to them, no attempt was made by the archaeologists, till 1947, to determine the chronological horizon of either of them. Wheeler undertook a scientific excavation at Brahmagiri in the Chitradurg District of Karnataka in 1947 to provide a chronological footing to the archaeology of South India, as also to give a precise date both to the Megalithic burials and the Black-and-Red Ware associated with them. The objective in the mind of Wheeler made him to observe, "South India is eminently a land of temples, but even the temples are outnumbered by these ancient tombs. And we know scarcely anything about them. A thousand megalithic cists might be excavated with utmost care without any significant addition to our knowledge of their chronology. Only by placing their culture in a related culture sequence, such as an adjacent town site could alone be expected to provide, was it possible to ensure a substantive advance of knowledge".[1] He dated the Black-and-Red Ware approximately between second century B.C. and first century A.D. mainly on the basis of its stratigraphic position below the Satavahana and Roman coins.[2] To corroborate his dating, he considered a bronze coin of Eran struck in the third or second century B.C., found in one of the Megalithic tombs at Sulur in Coimbatore District, Tamil Nadu, to be the best evidence for the dating of a Megalithic tomb in India, other than at Brahmagiri.[3]

Reviewing his findings in the book 'Early India and Pakistan', Wheeler said, "I have in fact suggested 200 B.C. as a schematic date for the beginning of the megalithic occupation there. The guess may err on the short side, but a date not earlier than the 3rd century B.C.

1. R.E.M. Wheeler, Ancient India No. 4, p. 185.
2. *Ibid.*, p. 202.
3. *Ibid.*, p. 300.

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would be consistent with the recorded finding of a bronze coin of Eran, ascribed to the 3rd or 2nd century B.C., in a port-holed cist at Sulur, again in the Coimbatore district.

"In review, there is at present no evidence for ascribing any South Indian megalith to a date earlier than the 3rd century B.C., and the 3rd century B.C.—1st century A.D., is here accepted as a provisional time-bracket."[1]

A new glorious chapter in the history of the Black-and-Red Ware was opened in 1954-55 when the ancient site of Ahar near Udaipur railway station in south-eastern Rajasthan was subjected to excavation. A thick deposit of about seven metres, representing the Black-and-Red Ware, presented a graphic picture of the Ware and revealed for the first time that, the industry had a very early beginning and also a very long life. Ahar is the first and the only site in India, so far excavated, which has yielded such a thick and rich deposit of the Ware. The ceramic exhibited varied designs of painting. A date of *circa* 500 B.C. was assigned by the excavator to the beginning of the Ware, not on an independent basis, but by its comparison with the Black-and-Red Ware from other sites in Central India.[2] The earliest date was, however, revised and pushed back to *circa* 2000 B.C. during the course of excavation in 1962.[3] In order to assess the spread and importance of the Black-and-Red Ware, so typical at Ahar, an extensive exploration in the Valleys of Banas and Berach in South-eastern Rajasthan was undertaken by the author in the years 1956-57, 1957-58 and 1958-59. The exploration brought to light more than twenty sites having the same cultural assemblage as at Ahar.[4]

While the earlier excavations at Ahar were in progress, important evidences on the Black-and-Red Ware were forthcoming from the Chalcolithic sites of Navdatoli and Maheshwar on the southern and

1. R.E.M. Wheeler, Early India and Pakistan, London, 1959, p. 163.
2. Indian Archaeology—A Review, 1954-55, p. 14.
3. H.D. Sankalia ahd others, Excavations at Ahar (Tambavati), Poona 1969.
4. Indian Archaeology—A Review, 1956-57, 1957-58 and 1958-59, pp. 8, 43 and 45.

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northern banks of Narmada in District Nimar West of Madhya Pradesh. The painted variety of this ceramic, observed for the first time at Ahar, occurred in the earliest levels of Period III at Navdatoli, which was Chalcolithic. The preceding two Periods belonged to the Stone Age. A date of eighteenth century B.C. was assigned to the earliest occupation of Period III on the basis of several C14 tests undertaken by the Pennsylvania University and later on by the Tata Institute of Fundamental Research. The Black-and-Red Ware in various forms continued to be in use at the site till about the sixth century A.D.[1] Further excavations on a large scale were undertaken at Navdatoli subsequently, to lay bare streets and houses and understand, if possible, the socio-economic background of the people of Periods III and IV. Period III, Chalcolithic, was further sub-divided into four sub-Periods (Phases). A large number of samples were examined by various institutions for C14 determinations and a date between 1600 and 1300 B.C. was assigned to all the four sub-Periods.[2] The typical painted Black-and-Red Ware occurred in the first two sub-Periods and it was replaced by a simple more utilitarian unpainted ware in sub-Period III (Phase III).

The discovery of the site of Lothal in Ahmadabad District of Gujarat in 1954 must be considered as an epic in the history of Indian Archaeology. Till then it was believed that the Harappa Culture was a privilege of the Indus Valley alone. The excavations at Lothal established for the first time that it extended to Gujarat as well. In the midst of characteristically well-known antiquities and pottery of the Culture, certain new finds were observed at the site, the most notable of which was the Black-and-Red Ware. Archaeologists were at first baffled at the occurrence of the Ware in a Harappan context, but later on they adjusted themselves, when it led to certain very important conclusions. The Black-and-Red Ware

1. H.D. Sankalia and others, Excavations at Maheshwar and Navdatoli, Poona 1958.
2. H.D. Sankalia and others, Chalcolithic Navdatoli, Poona 1971.

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occurred in all the levels at Lothal right from the earliest to the latest. With the help of Carbon 14 determinations the earliest remains of Lothal were dated to 2450 B.C.[1] The introduction of the Black-and-Red Ware in India was, therefore, further pushed back by about four hundred years. The ceramic continued to be in use in different cultural milieu till about eighth century B.C. at Rangpur in District Surendranagar of Gujarat.[2] Desalpur and Surkotada in District Kutch of Gujarat are the other sites where the Black-and-Red Ware constituted to be an integral part of the Harappa Culture. At Desalpur Black-and-Red Ware appeared in phase II of Period I. Phase I was mature Harappa, whereas phase II late Harappa. A date ranging between 2000 and 1600 B.C. was assigned to Period I on the basis of comparative study.[3] Following closely the discoveries at Lothal and Rangpur, quite a good number of sites, yielding Black-and-Red Ware and associated in one way or the other with the Harappa Culture, were excavated in Gujarat and Saurashtra. Amra and Lakhabawal near Jamnagar also yielded Black-and-Red Ware in association with Harappa Culture[4]. The occupational deposit at Rojdi in District Rajkot was divisible into three phases. Phase A was purely Harappan, but the Black-and-Red Ware was represented in all the three phases. On the basis of C14 determinations the Harappan occupation could be assigned a date between 1900 and 1700 B.C.[5] Further south at Somnath near Bhavnagar, Black-and-Red Ware was reported from the earliest Chalcolithic level in Period I.[6]

The horizon of Harappa culture was extended further to the south in the Tapti Valley by the excavation at Bhagatrav. Two Periods viz., Harappan and Medieval were distinguished at the site. The Harappan Period was subdivided into IA and IB. Sub-Period IA

1. S.R. Rao, Lothal and the Indus Civilization, Bombay 1973.
2. S.R. Rao, Ancient India Nos. 18 and 19, New Delhi 1963, Excavation at Rangpur and other Explorations in Gujarat.
3. Indian Archaeolgy—A Review, 1963-64, pp. 10-12.
4. *Ibid.*, 1955-56, p. 7.
5. *Ibid.*, 1958-59, p. 19.
6. *Ibid.*, 1955-56, p. 7.

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was mature Harappan followed by the occupation of late Harappan in sub-Period IB. The Black-and-Red Ware in a very limited quantity was found associated with IA only.[1]

The prolific site of Avra in District Mandsaur of Madhya Pradesh occupies an important place in the study of the Black-and-Red Ware. Located in Central Malwa, the painted pottery excavated from Avra established a cultural relationship between the Proto-historic sites of the Narmada and Chambal Valleys. The Black-and-Red Ware occurred throughout in Period II at Avra. Drawing equivalents from Maheshwar and Navdatoli, the excavator dated the beginning of the Period to the middle of the second millenium B.C.[2]

In early sixties of the century, the excavation at the ancient site of Eran in District Sagar of Madhya Pradesh yielded an entirely new type of painted Black-and-Red Ware in Period I. A date between 1700 and 1200 B.C. was assigned to this Period by the excavator.[3]

A few years later in 1965-66 excavations at Kayatha in District Ujjain of Madhya Pradesh were undertaken. Though the earliest occupation at the site could be dated to 2000 B.C., the painted Black-and-Red Ware was encountered only in Periods II and III with a date ranging between 1700 and 1200 B.C.[4]

At Jokha in Surat District, Black-and-Red Ware was reported from Period I, which happened to be Chalcolithic. Period I at the site was a mixed complex of various cultural traits like post-Harappan of Gujarat and Saurashtra, Chalcolithic of Malwa and Maharashtra. The Black-and-Red Ware was a common ingredient of all the Cultures represented at Jokha. A date of 1500-200 B.C. was assigned to Period I.[5]

1. S.R. Rao, Excavation at Rangpur, *op. cit.*, p. 190.
2. Indian Archaeology—A Review, 1959-60, p. 24.
3. Indian Arhaeology—A Review, 1961-62, p. 17.
4. V.S. Wakankar, Kayatha Excavation Number, Journal of the Vikram University, Ujjain 1970.
5. Indian Archaeology—A Review, 1966-67, p. 10.

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The results of the excavation at Nagal, eight kilometres west of Ankleshwar opposite Broach, were very important in bridging the gap between the late and post-Harappan Chalcolithic Cultures and the occupations of early historical Period in Southern Gujarat. Black-and-Red Ware occurred in all the three phases of occupation at the site, phase I, being pre-Iron.[1]

Though the Black-and-Red Ware was found in association with the well-known Painted Grey Ware at many sites in North-western Rajasthan, Uttar Pradesh and Punjab, no cognisance was taken of it on account of the insignificant quantity. The recent excavation at Atranjikhera in District Etah of Uttar Pradesh and Noh in District Bharatpur[2] of Rajasthan have, however, established an altogether new cultural horizon, where a clearly demarcated deposit of the Black-and-Red Ware has been found superimposed by the Painted Grey Ware. The Painted Grey Ware levels at Atranjikhera have been dated by the Tata Institute of Fundamental Research to eleventh century B.C.[3] It must be pointed out that the painted variety of the Black-and-Red Ware is conspicuous by its absence at these sites.

The tradition of painting, absent in the central Gangetic plains, takes a dramatic turn by its reappearance in Eastern Uttar Pradesh, Bihar and West Bengal. Kausambi[4] and Sohgaura[5] in District Allahabad and Gorakhpur respectively in Uttar Pradesh, Chirand[6] in District Saran of Bihar and Pandu-Rajar-Dhibi[7] in District Burdwan of West Bengal are some of the important sites which yielded the painted variety. According to a recent C14 dating, pit material dug from the lowest Black-and-Red Ware levels at Chirand has been assigned a date of 1600 B.C.[8] The C14 dates available for

1. Indian Archaeology—A Review, 1961-62, p. 11.
2. *Ibid.*, 1963-64, p. 28.
3. *Ibid.*, 1962-63 and 1963-64, pp. 34 and 35.
4. Potteries in Ancient India ed. B.P. Sinha, Patna, p. 203.
5. Indian Archaeology—A Review, 1961-62, p. 56.
6. *Ibid.*, 1963-64, p. 6.
7. *Ibid.*, 1962-63, 1963-64 and 1964-65, pp. 43, 61 and 46.
8. Potteries in Ancient India ed. by B.P. Sinha, Patna, p. 11.

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Pandu-Rajar-Dhibi are not very reliable, but on the basis of a comparative study, the first occupation at the site appears to have started in the second half of the second millenium B.C. At Mahisdal, three kilometres north-east of Shantiniketan, District Birbhum, the Black-and-Red Ware was dated to 1380 B.C. on the basis of C14 determinations.[1]

So far as Orissa is concerned, the Black-and-Red Ware makes its appearance in a very late context. Sisupalgarh near Bhubaneshwar is the principal site, where it has been dated. Though the Black-and-Red Ware occurred in levels anterior to that of the Northern Black Polished Ware, a conservative date of *circa* 200 B.C. to A.D. 100 was ascribed to it, on the basis of the Rouletted Ware.[2] The chronological bracket is repeated at Jaugada in District Ganjam.[3]

The recently excavated site of Kesarpalle in District Krishna of Andhra Pradesh occupies an important place in the study of the Black-and-Red Ware. An earlier beginning of the Ware was, no doubt, suggested by Wheeler while discussing the pit material from Cists V and VI at Brahmagiri, it was confirmed only at this site. The Black-and-Red Ware was represented in Period I at Kesarpalle which was superimposed by iron and Megaliths in period II.[4]

Far more important than the areas mentioned above are the regions of Maharashtra and Mysore which happened to be the nucleus for the introduction of the Megalithic Black-and-Red Ware. Amongst the important sites are Tekwada opposite Bahal[5] and Prakash[6] in District Jalgaon and Dhulia respectively in Maharashtra and Tekkalkota[7] in District Bellary of Karnataka. The Black-and-Red Ware was dated to seventeenth century B.C. at Prakash and

1. Indian Archaeology—A Review, 1963-64, p. 81.
2. B.B. Lal, Ancient India No. 5, New Delhi, 1949, pp. 62-105.
3. Indian Archaeology—A Review, 1956-57, p. 30.
4. *Ibid.*, 1961-62, p. 1.
5. *Ibid.*, 1956-57, p. 18.
6. B.K. Thapar, Ancient India Nos. 20 and 21.
7. M. S. Nagaraja Rao, The Stone Age Hill Dwellers of Tekkalkota, Poona 1965.

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Tekkalkota and fourteenth century B.C. at Tekwada. Piklihal[1] is yet another very important site where the Black-and-Red Ware occurred in a Neolithic context.

The study of the Black-and-Red Ware acquires additional importance from the extent of its distribution which is not confined to the subcontinent of India alone. It is popular enough in the United Arab Republic in the name of the Black-topped Ware. For the first time the ceramic appeared in the country in the fourth millenium B.C., as a characteristic feature of pre-dynastic Tasian, Badarian and Nagda Periods. After a gap of a century and half the industry gained an upper hand again during the times of C Group people.

The C Group people used the Black-topped ware as one of the funerary goods. Of great significance are the recently excavated bowls of the Black-and-Red Ware and jar stands in red ware from the C group graves at Tumas in Nubia. Both the types are identical to those encountered in the Megalithic burials of South India. There is a close similarity in the construction of the graves as well. Similarities in the two countries are no doubt of great importance, but the dissimilarities should not be completely ignored. The Nubian graves are devoid of any iron, whereas in the Megalithic tombs of South India iron implements in plenty are a common feature. The Megalithic burials in India are generally fractional, but in Nubia they are all inhumation. There is a wide gulf in the dates also. While the Nubian graves of the C group people are dated to about 1500 B.C., the Megalithic burials in India cannot be earlier than 1000 B.C.[2]

2. THE MAIN PROBLEM

A general review of the widespread distribution and chronological limits of the Black-and-Red Ware given above emphasises the vital role it played in the field of Indian Archaeology. There is

1. F.R. Allchin, Piklihal Excavations, Hyderabad 1960.
2. Indian Archaeology—A Review, 1961-62, p. 67.

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hardly any tract in India, where the ceramic did not form a part of the cultural milieu, during the two and half thousand years before Christ. It was not introduced in the entire country at one and the same time. The life span of the ceramic varies not only from one part of the country to the other, but also from site to site. The cultural context in which it occurs at individual sites or area is also not identical. The exterior black portion of the ceramic at least, if not the entire vessel, also happens to differ consistently from place to place. When all the aspects of the industry were considered together in detail, the archaeologists, both Indian and foreign, realised the seriousness of the problem without much loss of time. Vexed with the problem, Lal laid great emphasis on it in his presidential address at the seminar on 'Potteries in Ancient India' held at Patna in 1968 and said, "There is first of all the problem of the Black-and-Red Ware or, shall I say Wares"?[1] He asked the distinguished scholars present, "What, then is the real story of the Black-and-Red Ware which ranged in time from the second half of the third millenium B.C. down to the beginning of the Christian era and which encompassed the whole country during a major part of the first millenium B.C. ? Does the ware represent a single culture, with evolutions and devolution in point of time and space ? Or, is the similarity confined only to the technique of manufacturing, there being local adaptations by the concerned cultures ? Indeed, is it not high time that a thorough, analytic-cum-synthetic, study made of this Ware ?"[2] In the same seminar Purushottam Singh posed another question almost on similar lines. He said, "The problem before the archaeologists to-day is; do all these wares have any relationship generic or otherwise amongst them ?"[3] The same problem haunted the mind of Thapar when he said, "With the gradual elaboration and complication of the archaeological record the precise import and application of this ware needs closer investigation. Is the occurrence of this ware in different chronological horizons a manifestation

1. Potteries in Ancient India, ed. by B.P. Sinha, 1969, Patna, p. 6.
2. *Ibid.*, p. 7.
3. *Ibid.*, p. 72.

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purely of a technique without cultural implications or is it unitary and necessarily a continuum of a persistent culture-trait"?[1]

The problem of the relationship between the Black-and-Red Ware, occurring in different areas of the sub-continent, received the attention of the archaeologists as early as 1954. A symposium was arranged by the Archaeological Survey of India at New Delhi in that year to resolve the knotty problem. It was also studied in detail by Subbarao who published a brief review in his book 'Personality of India'. Subbarao was the first among the archaeologists to undertake a comparative study of the Black-and-Red Ware on the basis of typology. He reviewed the problem again in his paper, 'The problem of the Black-and-Red Wares of Northern India and their bearing on the South', presented before the first International Conference on Asian Archaeology, 1961 at New Delhi. At the same conference Ramesan also discussed the issue with a bearing on the site of Yelleswaram in Andhra Pradesh.

The widespread distribution of the Black-and-Red Ware, both in space and time, gives rise to three very pertinent questions which are as follows :—

1. Whether the Black-and-Red Ware found in different regions is simply a similarity in technique without any cultural or chronological implication ?

2. Whether the Black-and-Red Ware is a cultural trait of a group of people moving from one region to the other ?

3. Whether the Black-and-Red Ware is a combination of both the above issues viz. (*a*) in certain parts of the country it is simply a similarity in technique and (*b*) in others it is a cultural trait of a group of people moving from one place to the other ?

While dealing with the problem Subbarao remarked, "But at the present, it may be stated our knowledge supports a hypothesis of this ceramic fabric belonging to a single complex and its relation to the

1. K.S. Ramachandran, A Bibliography on Indian Magaliths, Madras 1971, pp. viii-ix.

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associated cultures remains to be ascertained by further excavations in certain crucial areas".[1] No doubt Subbarao made the above statement long back, after which many sites in different parts of the country have been excavated, the archaeologists continued to hold the impression and belief that the ceramic was introduced by one and the same group of people or community moving from one region to the other.

In the symposium arranged by the Archaeological Survey of India in 1954, special emphasis was laid on the types found at individual sites in various parts of the country but, unfortunately it could not make much headway on account of two factors; firstly, the paucity of time and secondly, the scholars had not come prepared to discuss the subject. The conviction that the Black-and-Red Ware belonged to one group of people moving from one place to the other was, therefore, carried through by the archaeologists.

Wheeler, the noted archaeologist, had his own individual view on the problem. He said, "that the pottery like the iron, may have been derived by the South from the North."[2] In his further remarks on the Ware he said, "It would appear rather to be at home between the Aravalli and the Vindhya Ranges and to have survived there and further south as a folk craft after the foreign and technically better N.B.P. Ware had arrived on the scene. With local modifications in form, decoration and skill, it subsequently penetrated southwards with an improving technique, and was ultimately perfected by the megalith builders and urn field users of peninsular India. The time table, as at present known fits this suggested diffusion of the Black-and-Red Ware as it fits that of the megalithic iron industry. The two cultural streams, one from the northern plains, the other from the Malwa plateau unite in the Deccan."[3] Wheeler was always very dramatic in assigning any cultural equipment or ceramic to the movement of certain people just as he connected the Megalithic

1. B. Subbarao, The Personality of India, Baroda 1958, p. 179.
2. R.E.M. Wheeler, Early India and Pakisian, London 1959, p. 164.
3. *Ibid.*, p. 166.

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Culture in South India with the southward extension of the Mauryan empire at the beginning of the third century B.C. In support of his views he said, "The sharp and sudden difference at Brahmagiri between the magnificently equipped megalith builders and their relatively primitive stone-using predecessors is exactly consonant with a tremendous historical event of this kind."[1] He held the same opinion for the introduction of iron in South India and emphatically came out with the statement, "Beginning with the fertilization of Middle Eastern Ideas along the north-west coast and up the Indus valley about the middle of the third millenium B.C., then spreading Southwards, on the one hand, as far as the Narmada estuary, and overflowing from the Punjab on the other hand through the Panipat-Delhi corridor into the great plains of the Ganga-Jamuna *doab* in the first quarter of the first millenium B.C., and later, between the fifth and third centuries B.C., percolating east-wards to the Ganges estuary and Southwards amongst the Chalcolithic 'communities of Central India".[2]

As it has already been pointed out, the archaeologists generally believed that the authors of the Black-and-Red Ware were a group of people or community, which moved from place to place. With the same feelings in his mind, Sinha posed a question in the seminar at Patna, "What was the direction of the migration of these early Black-and-Red Ware people".[3] He further asked, "Who were the people who used this ware ? They cannot be just a localised group".[4] On the same occasion Deshpande said, "We may see the movement of people from north without iron and using burial practices. With the introduction of iron, they got a new technology and adopted the megalithic technique. The megalithic Black-and-Red Ware enveloped practically the whole of south India, which continues upto the Andhra Pradesh period. The occurrence of the Black-and-Red Ware

1. R.E.M. Wheeler, Early India and Pakistan, London 1959, p. 164.
2. *Ibid.*, p. 137.
3. Potteries in Ancient India, ed. by B.P. Sinha, Patna, p. 11.
4. *Ibid.*

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has to be related with north".[1] During the course of the proceedings of the Seminar, Sinha further pointed out, "When I read a paper on Chirand excavation at the International Conference at Delhi and showed some pieces of pottery to Shri A. Ghosh, then Director General, Archaeological Survey of India, he remarked that if the Chirand pottery will be mixed with the Ahar material it will not be possible to differentiate them. The Black-and-Red Ware culture shows a conservative traditional Society".[2] Speaking on the movement of the Black-and-Red Ware people Gupta said, "There may be two routes of movement of the Black-and-Red Ware from Rajasthan and Ahar, (*a*) from Chambal to Yamuna, Kausambi, Prahladpur etc., and (*b*) from Eran, along the Vindhyan range they entered into the eastern parts of the country".[3]

A set of scholars believed that the authors of the Black-and-Red Ware were the Dravidians. Subbarao came out with this theory in 1962. He said, "We are no longer justified in making a distinction between the megalithic and non-megalithic wares. The recent discovery of a large number of painted black-and-red ware vessels decorated with dots (as at Navdatoli), at Adichanallur in the Tinnevelly District should set at rest this doubt about the homogeneity".[4] The same hypothesis was supported by Soundararajan in his paper on the community movements in Proto-historic India. While emphasising the association of the Black-and-Red Ware with the Dravidians he said, "It is for consideration if this Black-and-Red Ware (with painted designs) earlier, in the copper using contexts, and in plain forms, subsequently, in the iron-using contexts may not be ascribable to some distinctive ethnic group which had played a notable part in the culture-movements of the sub-tropical belt of the Indian sub-continent . . . . . I am loath to label the Black-and-Red Ware using people as Dravidians, but such would seem the impelling suggestion of the find of details which had been gathered about this

1. Potteries in Ancient India, *op. cit.*, p. 74b.
2. *Ibid.*, p. 111.
3. *Ibid.*
4. B. Subbarao, The Personality of India, Baroda 1958.

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remarkably ancient and ubiquitious ceramic culture. No, known data about the Dravidians and their early activities seem to clash against the known diffusion and proliferation of the Black-and-Red Ware using societies, right upto the thresh-hold of our present era two thousand years ago".[1]

Kamil Zvelebil of Czechoslovakia is another scholar who equated Black-and-Red Ware users with the Dravidians. The hypothesis of Zvelebil was based mainly on the similarity between the Harappan alphabets and the graffiti marks on the megalithic Black-and-Red Ware. According to his calculation the similarities go to the extent of 89%. The main observations of Zvelebil in this context were that the Proto-Dravidians entered into the Indo-Pakistan sub-continent from their original habitat between Nubia and Iran either before the development of Harappa Culture or together with its mature phase. The Dravidians, thereafter, moved in different directions of India. He felt that the Dravidians lived together with the Harappans and used the painted variety of the Black-and-Red Ware. The authors of the painted Black-and-Red Ware, according to him, were predecessors of the plain Black-and-Red Ware Dravidians who moved from their original land between 1200 and 800 B.C., towards the east and south-east and learnt about the metal iron in Central India near Bihar. Further, he emphasised that the Dravidians learnt the burial practices from the Harappans or the Deccan Neolithic people and developed them into elaborate megalithic burials.[2]

There is another set of scholars who believed that the authors of the Black-and-Red Ware were Aryans. Amongst the scholars holding this view, mention may be made particularly of B.P. Sinha and D.P. Agrawal. Sinha felt that the Aryans entered India by sea route and later on entered Bihar (Magadha) through the river

1. K.V. Soundara Rajan, Journal of the Oriental Institute, Vol. XII, No. 1, Sept., 1962, p. 74.
2. Kamil Zvelebil, Harappa and the Dravidain—an old Mystery in a New Light, New Orient, Prague, Vol. 4, June 1965, No. 3, pp. 65-69.

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Sadanira which has been identified with river Gandak.[1] While discussing the people who used this ware, he does not believe that they were just a localised people and said, "I had suggested in a paper read at the Aligarh session of the Indian History Congress in 1959 that a branch of the Aryans who came to India across the sea were responsible for this pottery".[2]

The analysis of the problem by Agrawal was based mainly on the available C14 dates from different sites. According to him, a recognition of two waves of Aryan migration to India was essential to interpret the data available. Of the two waves the Banas culture represented the first wave. "The following facts", he remarked, "raise a strong probability of equating Banasians with the early Aryans".[3]

1. The closeness of Banas culture, in time and space to the Harappans.

2. Banas culture traits showing heavy borrowings from the Harappans.

3. A spread of the Black-and-Red Ware tradition in the *doabs* and Bihar in pre-Painted Grey Ware and pre-Northern Black Polished Ware contexts respectively.

4. Folk migrations from Western Asia in first centuries of the second millenium B.C., and the end of the Harappans by the middle of the eighteenth century B.C., and finally the sudden emergence of Banas Culture about that time cannot be explained by any other hypothesis.

Agarwal was further of the opinion that the Black-and-Red Ware reached Bihar via Central India and West Bengal. He felt that West Bengal being thickly covered by forests, the authors of the Black-and-Red Ware could not move further east and hence turned

1. Journal of the Bihar Research Society, Vol. XLVI, p. 60.
2. Potteries in Ancient India, ed. by B.P. Sinha, p. 11.
3. D.P. Agrawal—C14 Dates, Banas Culture and the Aryans, Current Science, March 5, 1966, 35, No. 5, pp. 114-17.

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towards west in Bihar. This argument, however, could not stand in view of the earlier date of Black-and-Red Ware at Chirand.

The Aryan theory was also pleaded by S.P. Srivastava. In the proceedings of the Seminar on Potteries in Ancient India at Patna, he said, "Black-and-Red Ware tradition being earlier than the Painted Grey Ware tradition may be taken to be the early Aryan wave, while Painted Grey Ware tradition is a late ceramic tradition".[1]

In the preface to Kayatha excavation report Sankalia remarked, "The white-painted Black-and-Red Ware culture is certainly from South-east Rajasthan . . . . . The white-painted Black-and-Red Ware culture from Ahar with other distinctive shapes and fabric travelled further south-wards, and appears in Phase I at Navdatoli on the Narmada".[2] In the text of the report on the same excavation Dhavalikar and Ansari commented on Period II, labelled as Ahar Culture, and said, "The next inhabitants of the site had probably come from Rajasthan . . . . . The culture was first discovered at Ahar . . . . . It has, therefore, been labelled as the Ahar Culture".[3]

While presenting a view in support of a Neolithic origin for the Black-and-Red Ware, Arun Kumar rejected the theory of Aryans and Dravidians completly. He said, "So far as the Aryan equation is concerned, it would suffice to say that, to date the Black-and-Red Ware is not found anywhere else in regions extending from Scandinavia across Europe and Central Asia to North-Western India, and that no linguist, even in his wildest dreams, has ever connected the Aryans with Egypt. Coming to the other equation, it should be borne in mind that thus far only two major linguistic groups have been recognised, Aryan in the north and Dravidian in the south. If we accept the identification of the widespread Black-and-Red Ware with the Dravidians, and also of the Painted Grey Ware with the Aryans, we shall have to face yet another problem of

1. Potteries in Ancient India, ed. by B.P. Sinha, Patna, p. 41.
2. Z.D. Ansari and M.K. Dhavalikar, Excavations at Kayatha, Poona 1975.
3. *Ibid.*, p. 6.

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the greatest magnitude viz., that of the identity of the equally far flung Harappa culture".[1]

Inspite of so many views presented by a number of scholars, the problem remained unresolved, particularly because all the aspects and sites pertaining to the problem were not considered as a whole. The study of a limited number of sites in a particular region, within similar or slightly different chronological horizon, was bound to lead to a single culture theory. Certain scholars tried hard to adjust the evidences in favour of their own theory to prove that the authors of the Black-and-Red Ware were either Dravidians, Aryans, Kratyas, Turvasas, Yadavas, Bhils etc. While doing so, they ignored completely the findings which did not corroborate their views. Before arriving at any firm conclusion, it was essential to observe that the ceramic makes its appearance in different cultural contexts in different parts of the country. The chronological limits are also widely apart. The different cultural contexts of the country in which the Black-and-Red Ware is encountered are : (*i*) Neolithic Culture, (*ii*) Harappa Culture, (*iii*) Post-Harappan Lustrous Red Ware Culture, (*iv*) Post-Harappan Chalcolithic Culture, (*v*) Ahar/Banas Culture, (*vi*) Central Indian Chalcolithic Culture, (*vii*) Northern Deccan Chalcolithic Culture, (*viii*) North Karnataka Chalcolithic Culture, (*ix*) Jorwe Ware Culture, (*x*) Late Pre-Iron Culture (Kesarpalle), (*xi*) Intervening Culture between Ochre Coloured Ware and Painted Grey Ware, (*xii*) Painted Grey Ware Culture of the Gangetic Basin and Bikaner region, (*xiii*) Pre-N.B.P. Culture, (*xiv*) Early Iron Age Cultures, and (*xv*) Megalithic Culture.

1. Arun Kumar, The Proto-historic Black-and-Red Ware, A Plea for Neolithic Origin, Indica, Vol. XI, No. 1, Bombay, March 1974, p. 22.

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IV

Nature of Study

Since the Black-and-Red Ware came out to be a very important pottery, which raised many problems before the archaeologists, the author ventured to undertake its study in detail, keeping in view particularly the theory of Community Movement. Though the author can not claim to have seen the Black-and-Red Ware found at each and every site in India, he will not be far from truth in declaring that he has studied the ceramic explored and excavated from a considerably large number of sites located in different parts of the country. In fact, he was directly associated with a fairly large number of sites. He had also the privilege to visit United Arab Republic in 1962 to salvage the antiquities of Nubia from the area to be submerged in the reservoir created by the construction of Aswan Dam. Black-and-Red Ware in an appreciably good quantity was collected from the graves excavated at the ancient site of Tumas. Since certain insurmountable difficulties were confronted by him, because the materials from a large number of sites were not readily available and the brief reports published in Indian-Archaeology—A Review, happened to be very sketchy and lacked all details, it took an unduly long time to arrive at certain basic conclusions. The study has been based mainly on four considerations viz., (1) Types, (2) Fabric, (3) Chronological position of the ceramic and (4) Cultural milieu in which the ceramic occurred. In order to facilitate the study of individual sites and also for their comparative study they have been divided into different regions in a chronological order as far as possible. The Black-and-Red Ware has been classified into six regions in all, based broadly on the associated cultural complex and

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the representative shapes. It must, however, be made clear at the very outset that the divisions are not watertight compartments or entirely different from one another. Within the same region also substantial dissimilarities have been observed. The six regions are enumerated below (see Map) :

Region A

Area : Gujarat.
Main sites : Lothal, Rojdi, Rangpur, Prabhas Patan, Amra and Lakhabawal.
Date : 2400 B.C. to 800 B.C. with survivals at Prabhas Patan, Amra and Lakhabawal.

Region B

Area : South-eastern Rajasthan and Central Madhya Pradesh.
Main sites : Ahar, Gilund, Eran, Avra, Manoti, Navdatoli, Kayatha, Nagda, Besnagar.
Date : Circa 2000 B.C. to 800 B.C. with survivals at Eran, Navdatoli, Nagda and Besnagar.

Region C

Area : Eastern Uttar Pradesh, Bihar and West Bengal.
Main sites : Kausambi, Rajghat, Sohgaura, Sonpur, Chirand, Panbu-Rajar Dhibi and Mahisdal.
Date : 1600 B.C. to 800 B.C. with survivals at Sonpur and Chirand.

Region D

Area : Punjab, Western Uttar Pradesh, Northern and North-western Rajasthan.
Main sites : Rupar, Alamgirpur, Hastinapur, Atranjikhera, Sravasti, Gondi, Chosla, Noh and Jodhpura.
Date : 1100 B,C. to 800 B.C.

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Region E

Area : Maharashtra and Northern Karnataka.
Main sites : Bahal, Tekwada, Prakash, Bahurupa, Nevasa, Nasik, Jorwe, Daimabad, Piklihal and Tekkalkota.
Date : 1700 B.C. to 600 B.C. with survivals at Bahal, Prakash, Nasik and Jorwe.

Region F

Area : Southern Karnataka, Andhra Pradesh, Tamil Nadu, Kerala and Orissa.
Main sites : Brahmagiri, Hallur, Maski, Kesarpalle, Jaugada and Sisupalgarh.
Date : 1100 B.C. to 100 B.C.

REGION A

First of all the most important group of the Black-and-Red Ware, contemporaneous with the Harappa Culture, should be considered. Till recently it was presumed that the technique of manufacturing this pottery was introduced only by the Megalithic folk of South India, but the excavations at Lothal in District Ahmadabad (Gujarat) have proved that it was known as early as the second half of the third millenium B.C. Lothal is the first full-fledged Harappan site in India discovered after partition.

1. LOTHAL[1]

When the British rule over the Indian sub-continent came to a close in 1947 and the country was divided into two, India suffered the greatest set back in loosing the honour of being one of the three oldest centre of Civilization. The entire area covering the Indus Valley sites, which represented the third centre of Civilization, went to the share of Pakistan. Indian archaeologists, however, undertook extensive exploration in Gujarat and Rajasthan and brought to light a large number of sites, where the so-called Indus Valley Civilization flourished in the third millenium B.C.

1. S.R. Rao, Lothal and the Indus Civilization, Bombay 1973.

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Lothal (Saragwala) in District Ahmadabad, Gujarat was the first urban site in India where it was established beyond doubt that the Indus Valley Civilization, better known as Harappa Culture, was not confined to the limits of Pakistan, but extended further south. All the characteristics of the Indus Valley Civilization including seals and sealings were represented at Lothal. Typical Harappan pottery like dish-on-stand, perforated jar, goblet, lamp, convex-sided bowl in plain and painted red and buff wares were in common use. The inhabitants, like the Harappans, used stone weights, measuring instruments of shell, terracotta cakes, ornaments of gold etc. The city was also well planned on the lines of Harappans.

Situated at a distance of eighty kilometres south of Ahmadabad, the ancient remains at Lothal are now approachable by a good all-weather motorable road. The site is located almost at the meeting point of the Saurashtra peninsula and the mainland of Gujarat. The surrounding area is a flat, alluvial and marshy lowland on account of which it is called "Bhal" in Gujarat. It is not unlikely that in ancient times the site was located on the confluence of rivers Bhogavo and Sabarmati. The change in the course of the rivers has shifted Sabarmati to a distance of nearly three kilometres to the south-east of Lothal. River Bhogavo also flows away from the ancient site now. Though the presence of two rivers must have been a source of great prosperity to the inhabitants of Lothal, they also subjected the site to regular inundation and ultimate destruction.

The authors of the Bombay Gazetteer published in 1884 believed that the region of the Nal lake marshes which joins the Saurashtra Peninsula with the mainland of Gujarat was in ancient times under sea which connected the Gulf of Cambay on the south-east and Rann of Kutch on the north-west. According to the above observation, Lothal must have been situated on the sea or very close to the sea. Saurashtra, therefore, must have been an island. Regular silting and decrease in the sea level left an extensive flat, low lying marshy area which is a victim of floods almost every year during monsoons. The spread of flood waters in the low lying area presents the appearance of a vast lake, which is locally termed as "Nal".

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In a vast marshy flat area as described above the existence of an ancient site with an occupational debris of more than six metres was really surprising. Instead of two mounds as observed at Harappa, Mohenjodaro and Kalibangan, there is only one mound at Lothal. The higher south-eastern fringe of the mound was the area of the Acropolis, distinguished from the "Lower Town".

But for the cultural milieu represented by the Micaceous Red Ware and the Black-and-Red Ware, Lothal is a single culture site representing both the days of glory of the Harappa Culture followed by adverse circumstances, when the city was completely destroyed. "Before the advent of the Harappans", according to Rao, "Lothal was a small village standing on a low tell on the left bank of the river. It was protected againts flood by a mud-bund. The main occupation of the Micaceous Red-Ware-using people who inhabited the village was stock-raising, fishing and agriculture, but specialization in non-agricultural industries had already made remarkable progress, as can be judged from the ceramic wares, terracotta spindle whorls, stone beads and shell bangles found in the earliest levels. Bead-making, shell engraving, fishing, ivory-working, and cotton-spinning must have been important local industries which attracted the Harappan traders from the Indus Valley to Lothal".[1]

PERIOD A

The single culture occupation at Lothal as already remarked was divided into two Periods viz., A, the "period of exuberance" or advanced stage of Harappa Culture and B, the "decadent stage" of Harappa Culture. In Period A the round-bottomed jars and convex-sided bowls with stud-handle in Micaceous Red Ware with a variety of designs like plant motifs, horizontals, zigzags, loops, and intersecting lines executed in black over a light red surface were copied by the Harappans in their own fabric. The Black-and-Red Ware was also adopted. The new comers *i.e.*, Harappans brought great prosperity to Lothal. Typical Harappan ceramic forms like the perforated cylindrical jar, dish-on-stand, goblet, beaker, small-necked jar, trough,

1. S.R. Rao, Lothal and The Indus Civilization, Bombay 1973, p. 54.

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flower vase, jar with S-profile, cup with a perforated ear and the large globular jar with a narrow base—all in sturdy red ware—were introduced. All these types often occur in buff ware also. Convex-sided bowl with slightly incurved featureless rim was the dominant type in the Black-and-Red Ware. Similarity of the types in Black-and-Red Ware with the main wares is apparent at the site and has been clearly expressed by the excavator.

The antiquities yielded by the excavation at Lothal speak of the highly skilled technology of the Harappans at Lothal. They used long parallel-sided chert blades; copper or bronze barbed fish-hook, flat celt, arrow-head, leaf-shaped dagger and spearhead; cubical weights of chert and agate, and square steatite seals bearing a pictographic writing, besides animal motifs. Beads of stone, gold, copper, steatite, faience, semiprecious stones and gemstones; shell and ivory objects; and cotton goods were also produced.

The Harappans developed Lothal into a great commercial city and maritime trade centre by constructing a dockyard, measuring 218 metres in length and 37 metre wide. It was connected by means of a channel with the nearby river, Bhogavo. A warehouse was also built. A Bahrien seal found at Lothal established trade connections between India and Western Asia during the third and second millenium B.C. An impressive structure to house the chief to supervise the transactions of ware house was also erected.

As at other Harappan sites, the inhabitants of Lothal displayed a meticulous skill in planning the city into several blocks, connected by well laid out streets and lanes, striking each other at right angles. They had also a highly advanced sense of sanitation reflected by the public and private drains, manholes and cess-pools. In order to protect themselves against recurrent floods the people started constructing their houses on mud-brick platforms. Houses were generally made of mud-bricks, though burnt-brick houses were not unknown. The bathrooms were paved with burnt-bricks in all cases.

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PERIOD B

A devastating flood destroyed the prosperous Harappan city at Lothal completely. Buildings, both public and private, collapsed, reducing the city to a heap of ruins. The inhabitants had to take refuge elsewhere. The dockyard was also rendered unserviceable because of accumulation of silt. "The handful of men", according to excavator, "comprising farmers, fishermen and sailors who returned to Lothal after the recession of the flood found the town in utter ruins".[1] The limited number of people were not in a position to bring back the old prosperity of the city. They had to remain contented with the jerry-built houses with mud-floors, reed walls and thatched roof which were in marked contrast with the well laid out houses of the earlier days. In place of complete bricks in the bath room brickbats were only used. The ceramic wares and lithic tools, however, continued to exhibit the Harappan technique, though slightly different in form.

After a lapse of time the late Harappans exploited the indigenous material to improve their condition. The long chert-blades were replaced by short parallel-sided blades of jasper and agate. Weights of fine-grained stones were replaced by sandstone and granite. The shape of cuboid weight changed to truncated spheroid. Copper was also now scarce and as such was used to manufacture only most essential tools. A new type of copper ring with double spirals and shell bangles in place of terracotta were the new ornaments. Certain innovations in pottery were also made. The innovations were attributed by the excavator to evolution from the earlier types which were ultimately thrown into oblivion. The new forms were a bowl with a carinated shoulder and ovoid jar with a high neck evolved from the convex sided bowl and small globular jar of the preceding Period. The dish of the dish-on-stand lost its carination and the stand became squattish. The short stud-handle of the indigenous bowl was elongated, and the pinched lip of the oil lamp was replaced by a neatly-incurved rim. Beakers and goblets so commonly used in

1. S.R. Rao, Lothal and The Indus Civilization, Bombay 1973, p. 60.

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Period A were completely forgotten. The perforated jar gradually disappeared. In painting stylized animals and vegetable motifs, besides simple designs like group of wavy lines, loops, fronds, hatched triangles on a restricted area were adopted.

The Black-and-Red Ware remained in use, though the types were changed slightly. The bowls were now deeper with tapering sides. A new form was the bowl with splayed-out rim and carinated shoulder. Stud-handled bowl in this Ware was also produced.

Burying the dead was the general practice in both the Periods. The normal orientation of the bodies in the graves was north-south, though instances of east-west are not wanting. In some of the graves two bodies were interned together. A large number of pots were placed in the graves as funerary goods.

On the basis of C14 determinations Period A could be assigned a date between 2450 and 1900 B.C. and Period B between 1900 and 1600 B.C.

2. RANGPUR[1]

Unlike Lothal, Rangpur in District Surendranagar of Gujarat was a rural settlement of Harappa Culture. During the course of excavations three main cultural Periods with three sub-divisions in the middle one (IIA, IIB and IIC) were observed at the ancient site of Rangpur. Leaving aside Period I, which belonged to the late Stone Age, the Black-and-Red Ware occurred in all the levels. The only type available in Period IIA was a bowl with a featureless rim and convex profile. It is painted internally in dirty white vertical bands. The exterior is completely red unlike the central Indian Chalcolithic Black-and-Red Ware, where the upper part of the exterior is also black. All the characteristic features of Harappa Culture *e.g.*, brick structures and drains, pottery, ornaments, tools, weapons and weights except the seals and sealings and the mother-goddess find a place in

1. S.R. Rao, Excavation at Rangpur and other Explorations in Gujarat, Ancient India Nos. 18 & 19, Bulletin of the Archaeological Survey of India, New Delhi, 1963, pp. 5-207.

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this sub-Period. Like Lothal an isolated example of a new type of pottery in addition to Black-and-Red Ware, was represented in the Micaceous Red Ware, the main shape being handled sauce-pan. This shape was very popular in the Harappan occupations of Gujarat. In sub-Period IIA four structural phases were observed. The houses were built on mud-brick platforms. A long drain of burnt-brick was quite attracting. Burnt-bricks were also used in the bath rooms.

Period IIB was distinguished on the basis of certain very minor changes. The fabric of the pottery became coarser, though it is not applicable in the case of the Black-and-Red Ware, of which two types were reported. One is a bowl with a ring-fotted base and bulbous body and the other a bowl with a slightly everted and flaing rim. The former has a burnished surface, whereas the latter a rough exterior with painting in white wavy lines on the interior. The entire exterior of both the types is red. There is no substantial change in the over-all material equipments of the sub-Period, though poorer economic conditions have been alluded to.

A revival of certain earlier traditions and evolution of new ones marked Period IIC. Besides the deep bowl with a sharp carinated shoulder and ring-footed base carrying rich variety of painting both geometric as well as naturalistic in a new ceramic, well-known as the Lustrous Red Ware, there are several other types which have been pointed out by the excavator as a contribution of the Harappans by way of gradual evolution. Certain painted motifs such as loops with fronds, tendrils, fish-nets, leaves, row of birds, bull with x-shaped horns and running deer are quite new to this Period. In addition to these, blades are now produced out of jasper instead of chert and their size also is smaller. The Black-and-Red Ware, however, continued to be in limited use with only three shapes.

1. Jar with a beaked rim and bulbous body.
2. Bowl with an everted rim and carinated shoulder.
3. Dish with a raised flat rim and flanged shoulder.

The Lustrous Red Ware alongwith other accompaniments of the preceding sub-Period came into full form in Period III. Smaller

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vessels with thin section became the characteristic. Painting was now restricted to the upper part of the vessel and was executed in a deep black pigment over a deep shining red surface. The excavator remarked, "New forms were derived from the Harappa types as can be made out from the undermentioned details. The convex sided bowl with a sharp or featureless rim of sub-Period IIA, which developed a blunt-carinated shoulder and a slightly everted rim in sub-Period IIC, became sharp carinated at the shoulder with a concavo-convex profile in Period III. The dish-on-stand of sub-Period IIA, which had a projected rim and carinated shoulder, became non-carinated and the rim of its dish-part was shortened. Sometimes it became smaller in size but deeper and its stem thin and short, ultimately taking the shape of a short-stemmed bowl in Period III. A third type which underwent similar change was the large dish with a projecting rim and carinated shoulder of sub-Period IIA. The dish of sub-Period IIC was non-carinated and the rim rounded slightly. It developed a fully-beaded rim in Period III. The bulbous jar, which had a small neck in sub-Period IIA and slightly-high neck in sub-Period IIC developed an ovoid body and very high neck in Period III. The fabric was coarse".[1]

Besides the above mentioned developments in pottery forms, certain new features were also observed in antiquities. In place of faience, agate and steatite beads, terracotta beads came in common use. The long cylindrical beads of carnelian and terracotta fell completely in disuse. Shell bangles and beads, terracotta animal figures, particularly horse with a mare, bull, dog and pig were some of the important finds. As already pointed out, small pebbles of jasper and agate replaced chert for manufacturing tools.

The most important feature to be taken note of in Period III is the sophistication of the Black-and-Red Ware. The finish of the pots is of a very high order. In the earlier Periods the types which could be determined from the fragmentary sherds were restricted to two or

1. S.R. Rao, Excavation at Rangpur and other Explorations in Gujarat, Ancient India Nos. 18 and 19, New Delhi 1963, p. 24.

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three, but in Period III as many as twenty shapes were determined. In majority of the cases, the pots were painted unlike the preceding Periods. They are very good grounds to prove the popularity of this technique during this Period. The basic and fundamental difference which could be observed wasthat, besides the interior, a part of the exterior was also black, when in the earlier Periods the black was restricted to the interior. This must have happened on account of some modification in taste of the inhabitants.

Bowls, particularly with sharp carination at the shoulder and ring-footed base, was the principal type in use.

Houses in sub-Periods IIB and IIC and Period III, wherever available, were all made of mud-bricks.

Though no C14 dates were available for the site, the following dates have been assigned by the excavator to different Periods and sub-Periods. Period IIA—2000 to 1500 B.C. Period IIB—1500 to 1100 B.C. Period IIC—1100 to 1000 B.C. Period III—1000 to 800 B.C.

3. ROJDI[1]

Rojdi is situated on the bank of river Bhadar, 56 kilometres south of the District headquarters Rajkot in Gujarat. The cultural deposit at the site has been divided into two Periods with three sub-divisions in the earlier one. The sub-Periods termed as Phase A, B and C are Harappan in context. Period II is of early historical times.

Phase A, no doubt, represented the typical Harappa Culture, the association of microliths in the form of trapeze and lunates was a new feature and, therefore, surprising. Sankalia explained the new feature by suggesting an earlier phase of Harappa Culture or the advent of a later culture. The present work, however, is not concerned with this Phase on account of the absence of the Black-and-Red Ware. Phase A is said to have been destroyed by fire.

Two sherds of Black-and-Red Ware were found in Phase B. One of them is painted in white concentric circles. The other fragment

1. Indian Archaeology—A Review, 1958-59, p. 19.

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is of a bowl with everted rim and blunt carinated shoulder. Amongst the ceramics associated with the Black-and-Red Ware, red, buff and chocolate ware occasionally painted, a few green sherds and a corrugated grey ware are notable. Convex-sided bowl, perforated jar, dish with a flaring rim and dish-on-stand are some of the important types. Paintings were generally executed in black over a red and the designs comprised fish, leaves, hatched triangles and lozenges, intersecting loops, roundels, simple, wavy and vertical lines. The antiquities of the Phase included microliths (small blades and geometric), copper chisels, rods and bangles, beads of faience, banded agate and etched carnelian, cubical weight of chert and gold ear-ornament.

Phase C was designated as late Harappan. The Black-and-Red Ware was conspicuous by its absence which indeed is very surprising, when the sequence is compared with Rangpur, where the Black-and-Red Ware was found in plenty in the late Harappan context.

The ancient site of Rojdi was protected by means of large boulders, a feature quite new for the Harappans. The houses of mud or mud-brick were built on a specially built two feet high mud platform covered by rammed earth and lime.

The earliest date assigned to the Harappan occupation at the site, on the basis of C14 analysis, is 1970±115 B.C.

4. AMRA AND LAKHABAWAL[1]

The ancient sites of Amra and Lakhabawal are about 16 kilometres east of Jamnagar, a District headquarter of Gujarat. Both these sites yielded almost the same sequence as at Rangpur. Period I comparable to period II at Rangpur was late Harappa, though at Lakhabawal the Black-and-Red Ware was absent. The important pottery types of the Period were bowls and dishes-on-stand.

Red Polished Ware and coarse Black-and-Red Ware in appreciable quantity characterized Period II. Sankalia felt that the Red Polished Ware of the Period was identical to the Lustrous Red Ware

1. Indian Archaeology—A Review, 1955-56, p. 7.

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of Rangpur. Before we accept his view point, it is more than a necessity to examine the material from Lakhabawal once again. The doubt is pertinent in view of the fact that the Black-and-Red Ware at Lakhabawal is of a coarse variety and unpainted, whereas at Rangpur the Black-and-Red Ware associated with the Lustrous Red Ware is of a very fine fabric and painted as well.

Period III belonged to a very late period and hence outside the scope of this work.

The dates of different Periods were not calculated by means of C14 determinations. On the basis of comparative study Period I could be dated between *c.* 1900 and 1700 B.C. It is hazardous to date Period II in view of the controversy stated above.

5. PRABHAS PATAN[1]

The site of Prabhas Patan is located near the ancient temple of Somnath in District Bhavnagar of Gujarat. Late P.P. Pandya, who excavated the site divided the cultural debris into six Periods, each Period having several sub-Periods. Though the Black-and-Red Ware made its appearance only in Period IIIA with iron, a brief note on the finds of the earlier Periods is nevertheless necessary to present a complete picture. The finds of the earlier Periods were as follows :

IA—Microlithic blade industry on chalcedony, segmented faience beads and indifferently slipped and incised grey and red ware similar in shapes and patterns to the late Harappan pottery of Gujarat.

IB—Painted pottery in profusion. Dish-on-stand and convex-sided bowl. A few sherds painted on black on a cream or white surface like those in the lower levels of Ahar.

IIA—Lustrous Red Ware. Painted antelopes. Sharp carinated bowls.

1. Indian Archaeology—A Review, 1956-57, p. 16.

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IIB—Carinated bowls gradually disappear and the decorative motifs become simpler. A few microlithic blades.

Black-and-Red Ware in plenty associated with iron characterized Period IIIA. Dishes and bowls with rounded or carinated sides are some of the important types in the Black-and-Red Ware. The other ceramics are in varied tones of cream, grey and brown. Notable shapes among them are vase with a high and ledged neck, basin with loop handles and bowl with an everted rim.

Period IIIB was represented by the well-known Northern Black-Polished Ware. A terracotta flesh-rubber of 2nd Cent. B.C. was a very good evidence for dating. So far as the priority of iron and Black-and-Red ware to the Northern Black Polished Ware is concerned, it is quite in conformity with the evidence obtained at Maheshwar, Nagda, Ujjain, Sonpur, Bahal and Daimabad.

Periods IV, V, and VI did not yield any Black-and-Red Ware.

The Black-and-Red Ware of Prabhas Patan could be safely dated to 4th-5th century B.C.

6. SOMNATH[1]

Somnath in District Bhavanagar of Gujarat and very near to the site of Prabhas Patan presented a slightly different picture than Prabhas Patan. Five continuous Periods were distinguished at the site.

Period I was represented by the Lustrous Red Ware and Black-and-Red Ware, the latter in a meagre quantity. Microlithic blades, flakes and cores, copper celt and minute beads of steatite are the important antiquities.

The Lustrous Red Ware continued in Period II, though there was a marked deterioration in the paintings on the vessels. The Black-and-Red Ware also persisted.

1. Indian Archaeology—A Review, 1955-56, p. 7.

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Remains of a solitary house were observed in Period II. The house was rectangular on plan and was built of large flat slabs of miliolite limestone, which is found in abundance in the region.

Period III yielded a burnished variety of the Black-and-Red Ware. The range of types also, though restricted to bowls and dishes, was varied.

A large house with six rooms was the most noteworthy feature of the Period. It was built of boulders of miliolite limestone set in mud-mortar. A steatite seal-amulet engraved on both sides ; seven stylized sheep on one side and five on the other and a floral-shaped gold ear ornament were the important finds.

A coarse variety of the Black-and-Red Ware continued in Period IV. The quantity was also reduced.

Period V was characterized by the Red Polished Ware, when the Black-and-Red Ware disappeared completely.

7. KANASUTARIA[1]

A cultural deposit of six to eight feet covered by wind blown sand was observed at Kanasutaria near village Chhabasar in Dholka Taluka of Ahmadabad District in Gujarat. The principal ceramic wares of the site are the Lustrous Red Ware, red and buff wares of coarse fabric and Black-and-Red Ware. The pottery is similar to those found in Periods IIC and III at Rangpur.

8. ALAU[2]

Lustrous Red Ware and Black-and-Red Ware, which could be equated to Periods IIC and III of Rangpur have been reported from the ancient site of Alau lying between Babarkot and Rangpur in Dhandhuka Taluka of Ahmadabad District in Gujarat. The main types in the two wares are blunt-and sharp-carinated bowls. The non-

1. S.R. Rao, Excavation at Rangpur and other Explorations in Gujarat, Ancient India Nos. 18 and 19, Bulletin of the Archaeological Survey of India, New Delhi 1963, p. 188.
2. *Ibid.*, p. 185.

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carinated dish and high-necked jar also occur. Scrapers of agate and jasper were some of the lithic implements.

9. MOTA MACHIALA

A single culture site with Lustrous Red Ware and Black-and-Red Ware, Mota Machiala is situated in Amreli-Taluka and District of Gujarat.

10. SUJNIPUR[1]

Very near Patan, a Taluka headquarter in Mehsana District of Gujarat, Sujnipur yielded dish-on-stand in red ware, bowl in Black-and-Red Ware and deep carinated bowl without lustre and parallel-sided blades of chalcedony with fine crested guiding ridge. The lustre on the surface of the earthern wares is poor. According to the excavator the technique of decorating the surface of the vessels had ceased to be popular by the time the Lustrous Red Ware folk of Gujarat moved upto Sujnipur in the post-Harappan period. However, the shapes and composition did not change much.

11. BHAGATRAV[2]

The ancient site of Bhagatrav is located near Jetpur village in Hansol Taluka of Broach District in Gujarat. It was considered to be the southernmost Harappan settlement at the time of excavation. Two cultural Periods could be distinguished in the course of excavation. Period I was divided into two sub-Periods viz., IA and IB, the former representing the mature phase of the Harappa Culture and the latter a late phase. Period II was medieval. The Black-and-Red Ware occurred only in sub-Period IA in a very restricted quantity. The associated pottery, red and buff wares, were sturdy and well-treated. They were invariably painted in black. Typical pottery types of Harappa Culture like the dish-on-stand, dish with a carinated shoulder and expanded rim, heavy jar with a projected rim, basin, convex-sided bowl and handled bowl were encountered in considerable

1. S.R. Roa, Excavation at Rangpur and other Explorations in Gujarat, Ancient India, Nos. 18 and 19, p. 189.
2. *Ibid.*, p. 190.

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numbers in the sub-Period. Goblets and beakers were rare. The important antiquities included parallel-sided chert blades, a disc bead of steatite, biconical beads of carnelian and faience, a terracotta figurine of humpless bull and copper objects of indeterminate shape. According to the excavator, Bhagatrav IA is slightly earlier than Rangpur IIA in date.

12. HASANPUR[1]

Black-and-Red Ware has been found at Hasanpur near Bhatgaon in Hansol Taluka in Broach District with Lustrous Red Ware, coarse grey and red wares. Carinated bowl is the only type in the Black-and-Red Ware, whereas the red and Lustrous Red Ware are represented by dish with a beaded rim, bowl with a sharp-carinated shoulder, high-necked jar and dish-on-stand. The cultural equipments could be compared with Rangpur IIC and III.

13. NAGAL[2]

Eight kilometres west of Ankleshwar, opposite Broach, a District headquarter in Gujarat, on the southern side of Narmada estuary, Nagal is a single culture site, sub-divided into three phases. Black-and-Red Ware was encountered in all the three phases. The first phase was devoid of iron, whereas in the succeeding two phases Black-and-Red Ware was found in association with iron.

14. MALVAN[3]

The ancient site of Malvan on the lower estuary of Tapti river, east of Dumas village in District Surat of Gujarat, brought to light two Periods of occupation. The Black-and-Red Ware was found only in Period I, which was Chalcolithic. It was dated between 1400 and 1000 B.C.

1. S.R. Roa, Ancient India Nos. 18 and 19, p. 190.
2. Indian Archaeology—A Review, 1961-62, p. 11.
3. F.R. Allchin and J.P. Joshi, Malvan in Archaeogical Congress and Seminar Papers, ed. S.B. Deo, Nagpur 1972, pp. 36-42.

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15. JOKHA[1]

The ancient site of Jokha is in the Kamrej Taluka of Surat District in Gujarat. It is located on the southern bank of river Tapti at a distance of six kilometres from the present river bed.

Three Periods of occupation were distinguished at Jokha. The Black-and-Red Ware occurred only in Period I in association with other cultural traits representing late-Harappa culture. A date between 1500 and 200 B.C. has been assigned to the three Periods.

16. SURKOTADA[2]

Extensive explorations by the author followed by Soundararajan and Jagat Pati Joshi have now established that the Harappan occupation was spread over the entire area of Kutch. During the course of their stay in Kutch, the so-called Harappans also absorbed certain new cultural elements of a later date. Another interesting feature at the sites of Kutch is the existence of fortification in one form or the other. They were all a substantially large settlement with a "Citadel" and a "Lower Town" on a pattern similar to Indus Valley sites, though on a much smaller scale.

Besides exhibiting all the characteristic features of the mature Harappa Culture, the sites in Kutch possessed some new features completely unknown to the Harappans. Sankalia felt that the Harappa Culture in Kutch was developed at a later stage by new people or the Harappans themselves. He said, "The third interesting and important feature is that the Harappan outpost at Surkotada—and probably elsewhere—was developed by a later people or culture which we know as the white-painted Black-and-Red Ware or Ahar Culture, and a people from Saurashtra who used the stud-handled bowl."[3]

1. R.N. Mehta and S.N. Choudhary, Excavation at Jokha, Baroda, 1971.
2. J.P. Joshi, Explorations in Kutch and Excavation at Surkotada and New light on the Harappan migration, Journal of the Oriental Institute, Vol. XXII, 1972, pp. 98-144.
3. H.D. Sankalia, Prehistory and Protohistory of India and Pakistan, Poona, 1974, p. 360.

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In Rapar Taluka of Kutch District, about three kilometres north-west of Sanwa village, Surkotada is an important Harappan site in Kutch (Gujarat). Situated in a hilly terrain with a scant scrub vegetation, the ancient site is 160 metres in length and 125 metres in width, with a higher area on the western side and lower on the eastern. The occupational deposit varies between five to eight metres. It is a single culture site sub-divided into three viz., IA, IB and IC. Plain and painted Black-and-Red Ware occurred in the last sub-Period *i.e.*, IC with black painted red and other characteristic wares of the Harappans. The distinguishing feature of the sub-Period was the introduction of a hand-made red ware of granulated texture, which accounted for 40 to 70 percent of the ceramic yield. The ware was decorated in simple applique and incised designs. An undecorated crude Black-and-Red Ware and a few red or cream fragments, having among others, spirals painted in black or purple were also found. Pointed-bottomed Indus goblets occurred in a relatively higher proportion as compared to lower levels.

Coarse red ware was less frequent.

Important finds of the sub-Period consisted of one hoard of steatite and carnelian beads, including two etched ones; cores and blades of semi-precious stones; terracotta bulls, spindle whorls, a fragment of a square tank, cart frames and wheels; an inscribed terracotta seal without any animal; copper chisel and a hoard of copper beads and bangles. The chert blades used in the earlier sub-Periods increase in frequency in sub-Period IC.

Amongst the important ceramics of Period IA, mention may be made of : (1) typical Harappan pottery, (2) a few polychrome sherds painted in black and white. It also included a few vases with matt surface decorated in black and broad bands as in the pre-Harappan occupation of Kalibangan, (3) a red-slipped polychrome ware made on a fast wheel, (4) a polytone cream-slipped ware having vases with long or short concave necks, and (5) a reserved-slip ware. Three vessel types found at Surkotada are unknown from any site in India. They are: (*i*) hole-mouthed globular bottles, (*ii*) concave-necked vases, and (*iii*) basin with incurved rim.

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In sub-Period IB deterioration in the fabric of the pottery was observed. Bowl with a channel stud-handle was a completely new type. A large heavy copper celt constituted to be one of the important finds.

There were in all eight structural phases, three belonging to sub-Period IA, two to IB and three to IC. In sub-Period IA, both the citadel and the residential area were fortified. The mud-brick and mud-lump fortification was built over a platform of hard yellowish rammed earth about 1.50 metres in height. The fortification in the citadel area was reinforced by rubble facing inside, having five to eight courses. The citadel had two entrances, one on the southern side and the other on the eastern side. The width of the fortification was reduced in sub-Period IB, but it was reinforced on the eastern side as well by the use of mud-bricks on the inner side.

Remarkable changes in the material used for the structure were observed in sub-Period IC, when rubble and dressed stone became very popular. Besides a central gateway, two square bastious on the southern side were also provided in the rampart. Ramp and steps of the projected central gateway led to the main entrance of the citadel. The residential area was also fortified during the sub-Period.

On the north-western fringe of the mound four pot-burials were exposed. They contained only a few human bones and vessels. An oval pit in the same area contained a few pots and a dish-on-stand covered by a massive stone slab. There were no bones in the pit.

Eight carbon samples from the site were examined and on that basis a date between *c.* 2000 and 1600 B.C. was assigned to the cultural occupation at Surkotada.

17. DESALPUR[1]

The ancient site of Desalpur is located on the northern bank of Bamu Chela, a tributary of river Dhrud in District Kutch of Gujarat.

1. Indian Archaeology—A Review, 1963-64, pp. 10-12.

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The excavations brought to light two Periods of occupation with a sub-division in the earlier one. Period IA was said to represent the mature phase of Harappa Culture, whereas IB a later form of the same with certain new features.

Period IA was distinguished by the typical Harappan pottery like dish-on-stand, perforated jars, carinated lids, handled cups, goblets, ring stands etc. A thin grey ware of fine fabric and painted in bluish green pigment was also found in association. Similar ware has also been reported from the lowest levels of Mohenjodaro and termed as 'glazed ware'. Absence of the Black-and-Red Ware in sub-Period IA is somewhat surprising, particularly when the Micaceous Red Ware, a contemporaneous ware at Lothal did appear in the latest levels.

Period IB was more or less a cultural continuity of the preceeding sub-Period but for the introduction of certain new ceramic forms. They comprised cream-slipped bichrome ware painted in black or purple and reddish brown; grey ware both in plain and painted variety and above all the Black-and-Red Ware. Shapes in the last fabric are restricted to dishes. Paring technique, a characteristic of the Harappa Culture can be observed on the exterior of some of the vessels. In certain cases the pots are painted internally on the rim in oblique slashes. The excavator has compared them to the specimens found in Period IB at Ahar.

Amongst the important finds of Period I (both sub-Periods), mention may be made of copper knives, chisels, rods, rings and an inscribed seal (with Harappan script); beads of faience, paste and terracotta; chert ribbon flake blades; almond-shaped points and arrow-tips on chalcedony; weights of jasper and terracotta; terracotta triangular cakes, animal figurines, gamesmen with ram head, bangles, cart wheels and frames; spherical balls, saddle-querns and pestles in stone.

Amongst the structures a fortification of stone rubble is notable.

On the basis of comparative study Period I has been dated between *c.* 2000 and 1600 B.C.

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Period II was of early historical times and devoid of Black-and-Red Ware.

REGION B

Sheltered by Aravalli mountains on the north-west, south-eastern Rajasthan drained by rivers Ahar, Berach, Banas and their affluents happened to be the nuclear region for the study of Black-and-Red Ware. In 1955, the thick deposit and rich variety of the Ware at Ahar revealed its great importance for the first time. Ahar is the earliest site in the region.

The valley in which the Ahar Culture flourished provided a homely environment for occupation. The land was very fertile. The Aravalli ranges on the north-west brought adequate rainfall round the year rendering irrigation very easy. It was also a very good region for hunting purposes. Both types of animal viz., wild as well as deer and boar were available in plenty. For manufacturing tools and weapons, copper was readily available in the rocks not far away. In structures, the inhabitants could easily use the schist slabs, a local material. They could also use quartz nodules to decorate the mud walls.

1. AHAR[1]

The ancient site of Ahar, on the banks of a rivulet of the same name and locally known as Dhulkot is located at a distance of about a kilometre from Udaipur railway station. The road from the railway station has cut the mound in two unequal parts. Udaipur is a District headquarter in Rajasthan. Of all the ancient sites in India, Ahar possesses an unique place in throwing enormous light on the various stages through which the ceramic Black-and-Red Ware passed. The thick cultural deposit of Black-and-Red Ware has also played a very important role in establishing relationship between different cultures, which flourished in different parts of India.

1. H.D. Sankalia and others, Excavations at Ahar (Tambavati), Poona 1969.

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The huge mound of Ahar with more than twelve metres thick occupational debris was subjected to a large scale excavation by H.D. Sankalia. He divided the remains into two Periods viz. I, Protohistoric and II, Early historic. Period I was further sub-divided into IA, IB and IC. The Black-and-Red Ware is the principal ceramic industry of all the sub-Periods. Various ceramic industries on the basis of which the sub-Periods have been distinguished mainly are as follows :

IA—Mostly convex-sided bowls in Black-and-Red Ware, Buff and imitation Buff-slipped Ware; absence of Jorwe Ware; and absence of sharply carinated bowls.

IB—Absence of the Buff and Buff-slipped Ware; profuse Grey Ware; cut ware and ribbed wares in red.

IC—Sharply carinated bowls in Black-and-Red Ware and Red Ware; absence of metallic wares; occurrence of Lustrous Red Ware, akin to that of Rangpur; and the absence of the dish-on-stand.

It is essential to describe the details of pottery which constitutes the bulk of finds at Ahar. The associated antiquities are relatively very scarce. In fact the sub-Periods have been divided mainly on the basis of pottery. The earlier impression that the Black-and-Red Ware was the only important ceramic industry at the site needs a change on account of the rich and varied types of red and grey wares obtained during the large scale excavation.

Period IA

Black-and-Red Ware :—This ceramic industry has been classified into six groups which are as follows :

(*a*) the plain Black-and-Red with one or both surfaces burnished.
(*b*) Similar to (*a*) but with paintings in dull white both on the exterior and interior.
(*c*) The Black-and-Red with matt surface.
(*d*) The Black-and-Red with some portions having a pre-firing brick red slip, mostly on the black portions.
(*e*) The entirely black-burnished pottery.

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(*f*) The Black-and-Red with gritty core and surfaces.

Bowl is the predominant type in the Black-and-Red Ware. Bowl-on-stand, shallow pan, pots with globular body and pots with elongated globular body are the other shapes represented.

Paintings on the Black-and-Red Ware were executed in the pre-firing stage both on the interior and exterior surface. The large number of patterns comprised geometric designs like strokes and lines of various varieties in groups, dots, triangles, hatched diamonds, circles, arcs etc.

The other associated wares are as follows :

1. *Grey ware* : It has been represented in three fabrics viz. (*a*) with the outer surface smoothed by a slip, (*b*) similar to (*a*) but with the slip burnished, and (*c*) partly burnished and partly coarse. Globular vessels, lids, and dish-on-stand, are the main types. They are often decorated on the outer surface in incised and cut designs.

2. *Buff and Buff-slipped ware* : There are two varieties viz. (*a*) made of Kaoline throughout (the core and the slip) and (*b*) Buff-or-cream-slipped ware in which the surface has a buff or cream-coloured slip, while the core is pinkish.

3. *Tan wares* : There are two varieties viz. (*a*) metallic tan with beautifully tan-yellow-red slips, highly burnished and (*b*) thick drab tan-slipped.

The tan ware represented some characteristic shapes of Indus Valley *e.g.* stepped dish-on-stand. The heaviness, sturdiness, the uniformity of pinkish core and metallic ring suggest possibility of link with the late Harappan as at Rangpur. Dish-on-stand, ribbed pots, basins with a variety of bases and ribbed globular pots are the main types.

4. *Burnished grey ware with white painting* : Only two sherds which are burnished in a nice manner have been found.

5. *Tan-slipped ware with white paintings* : Forty fragments of this ware have been found. They have a red-slipped exterior and

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the interior is either red or black or blotchy. This ceramic is more or less a variant of Black-and-Red Ware in fabric, shapes and painted designs.

6. *Chocolate-slipped metallic ware* : Two types of fabric have been reported in this ware. They are : (*a*) with reddish brown slip and (*b*) with dark chocolate slip. This group is simply a variety of tan ware. In addition to the types in tan ware, two new types viz. (*a*) rimless bowl and (*b*) bowls with convex sides were produced in this fabric.

7. *Red ware* : It constituted the bulk of the pottery at Ahar with a number of varieties viz. (*a*) thick red-slipped, (*b*) with red wash, (*c*) with dull brown mechanical slip, (*d*) with rusticated exterior, (*e*) red-slipped metallic ware, and (*f*) drab red ware. The main types are : (1) Dish carinated, (2) Dish stepped, (3) Bowl-on-stand, (4) Pan, (5) Dish stemmed, (6) Pot-rest, (7) Ribbed vessel, (8) Lota, (9) Basin, (10) Globular vessel, (11) Pot-rest, (12) Bowl on-stand with carination, (13) Pans with roughened exterior, and (14) Stems.

A considerable number of decorated thick grey and red fragments also formed part of the cultural complex.

Period IB

Sub-Period IB is characterized by abundance of red ware, increase in the use of Black-and-Red Ware and introduction of certain new wares.

1. *Black-and-Red ware* : The shapes of sub-Period IA are repeated, but the quantity is much more. A marked tendency towards providing a carination to the rimless bowl is observed in sub-Period IB. Both the exterior and the interior are beautifully burnished.

2. *Tan ware* : This fabric has been classified into seven groups which are : (*a*) with metallic ring, tan core and deep red slip, (*b*) similar to (*a*) but with a dull red slip, (*c*) similar to (*a*) but with orange red slip, (*d*) similar to (*a*) but with chocolate-coloured slip, (*e*) tan ware with porous brown core and mechanised tan slip, (*f*) plain tan-red ware with well fired pinkish red core, and (*g*) with tannish red

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core and red wash. The popular shapes are stepped dish, shallow dish, corrugated stem, basin, ring stands, globular pot and pot-rest.

3. *Grey ware* : There are three varieties viz. (*a*) burnished, (*b*) partially burnished, and (*c*) unburnished. All these varieties existed in IA as well, but the quantity in IB is reduced. Most of the types of IA also continue.

4. *Chocolate-slipped metallic ware* : The quantity of this fabric as compared to IA is reduced. The main shapes are stepped dish, deeper dish, ringed pot-rest, smaller stepped dish, hollow stem of stand and hollow stand bases with flared sides.

5. *Tan-slipped ware* : There is hardly any difference when compared with IA. The common shapes are stepped dish, hollow stems, deep and large sized dishes-on-stand and hollow flared bases.

6. *Red-slipped wares* : The quantity of this ware increases in IB. Three varieties have been observed in it. They are : (*a*) thin red-slipped with metallic ring, (*b*) thick red-slipped ware, and (*c*) coarse red ware. The popular shapes are vessels with low concave neck and medium high cylindrical neck, bowl with convex sides and everted rim, hollow cylindrical stems with corrugations, small convex-sided bowl with ribbings, low hollow small stems and globular vessels with slightly out-turned rim.

Almost all the shapes of sub-Period IA continue, but the most notable is a thick corrugated storage jar.

7. *Coarse red wares* : The quantity of coarse red ware is much less in IB. Decorated sherds like IA are also reported.

Period IC

The quantity of pottery is very much reduced in IC as compared to IA and IB. Two significant features have been distinguished in this sub-Period. They are: (*a*) large variety of painted wares introduced, and (*b*) apart from the painted Black-and-Red Ware and a couple of grey ware sherds with white paintings, the metallic tan wares and the medium thin tan ware with white paintings are conspicuous

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by their absence. Two fragments of Rangpur Lustrous Red Ware are also a new feature in addition to a score of other painted sherds showing black paintings on different types of red ware.

The principal wares are : (*a*) Black-and-Red Ware with sharply-carinated shoulder in the bowl as the chief characteristic, (*b*) Thick-red-slipped, (*c*) thin burnished slipped, and (*d*) coarse red. Very little quantity of grey ware occurred. The brown-slipped Black-and-Red Ware disappeared.

The distribution of the meagre antiquities in the three sub-Periods at Ahar are as follows :

IA—Microliths in the form of hollow and side scrapers, fluted cores, all in quartz; beads of faience, schist and terracotta; ear-stud and bangle of terracotta; copper bangle; stone balls; stone saddle quern; bone point and ground tool.

IB—Microlithic fluted cores and blunted-back blade in quartz; beads of agate, bone, calcite, carnelian, faience, jasper, schist, shell, steatite and terracotta; skin-rubber, head-scratcher, ear-studs, votive tanks, crucibles, dice, bull, horse, elephant, pendants, bangles, human figurine, finials and pipes of terracotta; copper rings, bangles, kohl sticks, celts and knife blade.

IC—Microlithic convex scrapers, borer-cum-hollow scrapers and borers in quartz; beads of carnelian, crystal, glass, jasper, lapiz, schist, shell and terracotta; skin rubbers, ear-studs, votive tank, crucible, bulls, elephant, stoppers, pendants, bangles, balls and pipe of terracotta and copper rings.

The structures at Ahar were all made of mud walls over a plinth of roughly dressed schist slabs. Mud-bricks were also used occasionally in the walls. The roofs were in all likelihood supported on wooden posts and beams. Clay was mixed up with river gravel to prepare the floor of the houses. In a number of cases hard burnt clay was also used in the floors. The houses, fairly large in size, were raised in quick succession over the earlier debris.

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Several C14 samples were examined and the following dates were assigned to the three sub-Periods.

IA—1940 to 1765 B.C.

IB—1725±110 B.C. Actually a cultural continuation of IA.

IC—1550 to 1270 B.C.

Period II was marked by the advent of iron and Northern Black Polished Ware and as such not concerned with the present work.

2. OTHER SITES IN SOUTH-EASTERN RAJASTHAN[1]

The promising site of Ahar gave a great incentive to archaeologists to take up widespread explorations in the South-eastern part of Rajasthan sheltered by the Aravalli mountains on the north-west. The explorations were concentrated in the river valleys of Ahar, Berach and Banas along with their tributaries, which covered the Districts of Udaipur, Chitorgarh, Bhilwara, Ajmer and Jaipur. The ultimate objective of the exploration was to assess the spread of the Black-and-Red Ware in the triangular stretch of land surrounded on all sides by the then known horizons of three important proto-historic cultures-on the north, west and south-west by the Harappa culture of Bikaner, Sind and Gujarat, on the north-east by the Painted Grey Ware Culture of the Indo-Gangetic plains and on the east, south and south-east by the Chalcolithic Cultures of Central India and the Deccan. To trace out inter-relationship of these cultures with the Black-and-Red Ware was also one of the aims.

The exploration conducted by the author brought to light more than thirty sites having family relationship with Ahar. Of all the sites, Gilund in District Udaipur happened to be most potential. Umand, Keli, Purani Marmi, Pachimto and Khor in District Chitorgarh; Darauli, Tarawat and Joera in District Udaipur and Kadukota, Joashia and Kumaria in District Bhilwara were some of the other important sites.

1. Indian Archaeology—A Review, 1956-57, 1957-58 and 1958-59, pp. 8, 43 and 45.

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The above mentioned sites yielded beautiful painted designs executed in dirty white pigment, both internally and externally, on the black surface of the Black-and-Red Ware. The motifs comprise vertical and oblique strokes, dots, chevrons, concentric circles, intersecting arcs, wavy lines in group, cross-hatched lozenges, oblique lines in group and wavy lines joined to a horizontal band. Bowl constituted to be the dominant shape with a few examples of basin and dish.

An assessment of the material from the sites in south-eastern Rajasthan indicated that the nuclear area of the Ahar Culture was restricted in the north to Bhilwara District, the northern-most outpost being Kadukota. The conclusion was based on three grounds. Firstly, all the sites north of Kadukota yielded only a few fragments of the Black-and-Red Ware of the Ahar variety in contrast to the huge quantities of that Ware from the southern sites like Purani Marmi, Gilund etc. Secondly, the painted designs, so profuse on the Black-and-Red Ware at the southern sites, were conspicuously absent further north of Kadukota. Thirdly, further north of Kadukota the shapes in the Black-and-Red Ware were similar to those found in association with the Painted Grey Ware of the Indo-Gangetic basin. Gilund in District Udaipur and Agtari in District Jaipur are the two very potential sites to establish cultural links between the Ahar and the Painted Grey Ware Cultures. Agtari may be much more useful for this purpose, as it happens to be the northern-most site near the focal region of the Ahar Culture. Besides the painted Black-and-Red Ware fragments, black-on-red painted pottery is also found at Agtari. Agtari is well within the region of the Painted Grey Ware, the limits of which have now been extended by another two hundred forty kilometres further south as a sequel to discovery of the site of Chosla in District Ajmer. Incidentally it may be mentioned that a fragement of the Painted Grey Ware was also found on the surface at Gilund.

3. GILUND[1]

As already pointed out, Gilund in District Udaipur can claim a much more privileged position than Ahar on account of the fact that

1. Indian Archaeology—A Review, 1959-60, p. 41.

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it can go a long way in establishing cultural links between the north and the south. The ancient site of Gilund has yielded besides the painted Black-and-Red and black-on-red wares (characteristics of Central India), dishes of grey ware with straight sides and incurved rim of the type found in Period III of Hastinapur in District Meerut of Uttar Pradesh.

There are two mounds at Gilund. Both of them have been partially excavated. The western mound was occupied only during the earlier Period which is Chalcolithic. Similar to Ahar, the painted Black-and-Red Ware holds an upper hand on all the ceramics at Gilund. Of the numerous painted designs executed, both internally and extrenally, group of dashes or wavy or straight lines, zigzags, opposing group of concentric arcs, cross-hatched lozenges either in a continuous row or in groups separated by sets of vertical lines, are important. Amongst the notable types, mention may be made of deep bowl with a flaring rim and almost straight sides, shallow bowl and basin with sharpened and everted rim and a vase with a splayed-out rim. Plain and painted black, burnished grey, red, black-on-cream, black-on-red and polychrome wares constituted the other ceramic industries. The painted black-on-cream and black-on-red wares were confined to the upper levels only. Copper fragments, microliths, terracotta animal figurines and gamesmen, beads of agate, chalcedony and steatite, sling balls, saddle querns and rubbers of stones are the other finds.

Unless and until the site is subjected to a large scale excavation, it is not possible to obtain a clear-cut sequence and fix up the horizon of the Chalcolithic occupation. Since the excavation on the eastern mound, which contained the remains of later Periods as well, was restricted to the topmost levels, the picture remained incomplete, particularly in regard to the continuity or otherwise of the Chalcolithic occupation. Gilund is the only ancient site, so far discovered in India, where both burnt-brick and mud-brick structures have been observed in the Chalcolithic Period. Since the excavation was on a limited scale, the entire plan of the structures could not be ascertained.

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However, a series of mud-brick walls in different alignment meeting each other at right angles formed a massive complex. The massive structure was filled with sand. It might have served the purpose of a granary.

The chronology of the site could not be determined in absolute terms. A comparative study of finds from Gilund with those from Navdatoli was made to date the Chalcolithic remains. The Chalcolithic remains at Navdatoli were dated earlier by radio carbon tests to *c.* 1500-1000 B.C. The comparison was based on the following grounds.

In the first place, the painted Black-and-Red Ware occurs throughout the Chalcolithic levels at Gilund but is stated to be confined mostly to the lowermost layers of Period III (Chalcolithic) at Navdatoli. Secondly, the cream-slipped ware, bearing typical designs like the dancing-figure, spotted animal, etc., in black or purplish black colour, is 'restricted to the lower levels' (of the Chalcolithic Period) at Navdatoli, whereas at Gilund it has been found so far in the uppermost levels only. The disposition of these two wares at the two sites would indicate that the upper levels of the Chalcolithic Period at Gilund may broadly be contemporary with the lower levels of the corresponding Period at Navdatoli. Thus, the Chalcolithic Period at Gilund may roughly be placed during the couple of centuries on either side of 1500 B.C. The latest occupation at the site can, on ceramic evidence, be placed broadly in the second half of the first millenium A.D. The date of the Chalcolitic remains will have to be revised in the light of new dates arrived at by the latest excavation at Navdatoli.

4. ERAN[1]

Eran in District Sagar of Madhya Pradesh is one of the most important Chalcolithic sites in Malwa. The high mound on the banks of river Bina is situated about sixteen kilometres from Bina

1. U.V. Singh, Excavation at Eran, Journal of Madhya Pradesh Itihasa Parishad, No. 4, 1962, pp. 41-44.

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Junction railway station of the Central Railway. The great importance of the site can be judged by the protection which was provided to it from all sides. In the first instance it was sheltered by the meander of river Bina. Further protection to the city came from the fortification raised in Chalcolithic times. A moat running by the side of the fortification was an additional source of strength.

The cultural remains at Eran was divided into four Periods viz., Period I, Chalcolithic, assignable to the second half of the second millenium B.C.; Period II, covering a few centuries prior to the Christian era; Period III, covering the first five centuries of the Christian era; and Period IV, from *circa* sixteenth to eighteenth century. The Black-and-Red Ware occurred only in the first two Periods.

Period I was characterized by the presence of microliths and painted Black-and-Red, thick grey and black-on-red wares, the last being mostly of the Malwa fabric. The occurrence of a few specimens of plain and thin coarse grey ware is noteworthy. A solitary sherd of coarse grey ware had a thick white coating on the exterior. Four sherds of thick grey ware were painted in light red pigment with linear patterns. Two fragmentary channel spouts in red ware were also obtained. The associated finds included terracotta animal figurines; beads of steatite, carnelian, shell and terracotta; stone fragments; terracotta and shell bangles; a small copper piece; signet-ring; circular gold pieces and a fragment of a bone pin.

The painted Black-and-Red Ware of the Period had its own individual characteristic, not reported so far from any other site in India. The black portion in this fabric is restricted to the interior alone. The upper part of the exterior rim, unlike other sites, is all red. The pots were painted in a variety of designs like oblique and wavy lines and cross-hatched diamonds. Though of course the Black-and-Red Ware was a flourishing industry at Eran, it could not claim the privileged position which it possessed in South-eastern Rajasthan. In South-eastern Rajasthan, the Black-and-Red Ware was the principal ceramic industry. There is some difference in the chrono-

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logy also. In view of the fact that the black-on-red painted ware is contemporaneous with the earliest Black-and-Red Ware at Eran, when the former was introduced at Ahar only in Period IC, it can safely be assumed that the latter industry started much later at Eran.

Thick grey ware painted is, however, a new element at Eran. Some of the designs and types in this ceramic are similar to those in Black-and-Red Ware. Inspite of the fact that this type of grey ware is entirely different from the Painted Grey Ware of the Indo-Gangetic basin, cultural influence from that region could not be ruled out.

Since the excavation was on a restricted scale based on the vertical system, it was not possible to expose the plan of the houses or structures. In all probability the houses were made of perishable materials like mud with roofs supported on wooden posts and beams. The floors were made up of rammed clay mixed with *kankar*.

Period II was marked by the introduction of iron and the Northern Black Polished Ware, besides the disappearance of most of the earlier wares. The plain Black-and-Red Ware, however, continued throughout the occupation of this Period.

The Black-and-Red Ware disappeared completely in Periods III and IV.

A few samples from the site were no doubt subjected to carbon 14 tests, but the results achieved were confusing. In the circumstances, therefore, the dates ascribed by the excavator must be considered as final. The excavator assigned a date of 1700 B.C. to the earliest remains.

5. MAHESWAR AND NAVDATOLI[1]

The two ancient sites of Maheswar and Navdatoli are situated opposite each other on the banks of river Narmada in District Nimar

1. H.D. Sankalia and others, Excavation at Maheshwar and Navdatoli, 1952-53, Poona 1958.

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West of Madhya Pradesh. The Black-and-Red Ware in various forms continued to be in use for a very long time.

Excavations on a large scale at the two sites revealed six Periods of occupation. Of these, the first two *i.e.*, Periods I and II belonged to the Stone Age.

Period III was Chalcolithic, distinguished by microliths, copper objects, painted Black-and-Red and black-on-red wares. The painted Black-and-Red Ware was restricted to the lowest levels of the Period in a very limited quantity. The important shapes in the Ware are: (*i*) cups or bowls with outgoing sides, (*ii*) oval and semi-circular bowls with rounded or carinated belly and in drawn short rim, and (*iii*) dish (?). The paintings have generally been executed on the exterior surface, though specimens with painting on the interior are not altogether absent. As compared to the restricted number of shapes, the painted designs are much more varied. They comprise: (*i*) group of oblique and vertical lines resting on horizontal line, (*ii*) short oblique strokes occasionally touching a horizontal band, (*iii*) oblique lines cutting each other or in between horizontal lines, (*iv*) Triangular or arrow-head motif, (*v*) wavy vertical lines between horizontal lines, (*vi*) group of oblique lines and dots arranged in a knot like shape forming panels, (*vii*) vertical and step like wavy lines in panel, (*viii*) oblique parallelograms in a row with dots in between, (*ix*) overlapping triangles over horizontal lines, (*x*) latticed zigzag, and (*xi*) group of semi-circular lines.

The painted black-on-red ware predominated all the ceramic industries of the Period. Other associated ceramics included white-slipped with paintings in black or vermilion black, greyish black and coarse red and black wares often incised. Chalcolithic blade industry of the crested guiding ridge technique in agate and chalcedony happened to be very popular. A few scrapers, besides geometric forms like lunates and trapezes were also found. Other important antiquities of the Period included terracotta biconvex wheels, bird toys and ear ornaments; shell bangles and saddle querns, legged querns, mullers and anvils of stone.

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Period III did not come to an end abruptly but merged gradually with the succeeding Period IV, characterized by the Northern Black Polished Ware and Iron. The Black-and-Red Ware of the preceding Period survived, though with significant changes, and became one of the dominant ceramic industries. The tradition of painting the Black-and-Red Ware, which was so popular in the preceding Period disappeared completely.

6. NAVDATOLI[1]

A large scale horizontal excavation at Navdatoli was again undertaken in order to lay bare the streets and houses and also to understand if possible the socio-economic background of the people who inhabited it. The subsequent excavations revealed two Periods of which Period I was Chalcolithic, further divisible into four sub-phases. Period II belonged to Iron Age and later times.

Phase I of the Chalcolithic Period was characterized by white painted Black-and-Red Ware, cream-slipped ware and painted black-on-red ware (Malwa Ware). The mud houses and the lime floor over black cotten soil were destroyed by fire. According to the excavator, "The Black-and-Red Ware with graceful forms either imitate those in the Black-on-red and cream-slipped ware or show a parallel development. Similar is the position at Ahar in Eastern Rajasthan, from which the technique alone seems to have been borrowed".[2]

All the wares of Phase I continued in Phase II, but for the bichrome painted ware and hand-made coarse red ware. Certain new wares were also introduced. They were : (*i*) burnished red-slipped ware, (*ii*) metallic ware with snuff colour slip, (*iii*) metallic red ware and (*iv*) Jorwe Ware. The types in the Black-and-Red Ware were now simple and more utilitarian consisting of water pots, dishes, and basins. The quantity as compared to other wares was, however, very restricted. The Jorwe Ware had a great impact on the life of the people in Phase II and continued to flourish with the Malwa Ware. Navdatoli was again a victim of devastating fire.

1. H.D. Sankalia and others, Chalcolithic Navdatoli, Poona 1971.
2. *Ibid.*, p. 80.

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The use of painted Black-and-Red Ware, disappeared in Phase III, though a few bowls with painting in white did continue. They were considered to be either survivals from earlier Phase or derived while levelling the debris of the earlier habitation. The other wares like the Malwa, cream-slipped, coarse red, grey, Lustrous Red, metallic, mat and Jorwe also continued. Red-slipped, burnished and metallic wares were newly introduced. Bichrome wares were totally absent.

All the wares of Phase III except the cream-slipped ware continued in Phase IV. An unpainted variety of Black-and-Red Ware was also used. A sturdy ware painted externally and a coarse red ware with applique designs were introduced. Frequencies of various types of pottery used in Phase IV are as follows :

1. No cream ware.
2. Jorwe relatively more than that in Phase III.
3. Malwa ware abundant : channel-spouted maximum.
4. Coarse red most.
5. Coarse red applique patterns maximum.
6. Malwa dishes with ridges totally absent.
7. No bichrome painted/no grey with applique roundels.
8. No incised designs/no antel ope designs.

The associated antiquities of the Chalcolithic Period comprised microliths (mainly blades of crested guiding ridge technique); ring stones; stone balls; hammer stones; hammer stone anvil; grinding stones; stone querns; beads of agate, amazonite, bone, carnelian, chalcedony, copper, coral, crystal, faience, glass, gold, jasper, lapiz, opal, quartz, quartzite, sandstone, shell, steatite and terracotta; terra-cotta discs, skin-rubbers, lamps, ear-studs, ring, sharpeners, cakes, wheels, toys, horse (?), amulets, whorls and marbles; copper celts, chisel, arrow-heads, sword, beads, bangles, rings, poker, pointed rods, point-cum-engraver, fish-hooks and nails; bone points, kohl-sticks,

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bangles, discs or whorls, pulley like objects, dagger, pendant and ornamental object, a perforated and a polished rib piece; an ornamental disc in ivory, and shell ear studs, whorls, bangles and ring. Commenting on the settlement at Navadatoli Sankalia said, "The earliest settlement took place on a 80 ft. high terrace. This was made up of pebbles and boulders at the base, but its upper half was pure alluvial silt, yellowish-brownish in colour. The topmost portion of this silt had developed into a blackish weathered soil. This black soil layer gives some idea of how the region looked when the first settlers had arrived at Navdatoli (and other Chalcolithic sites). Observation of numerous sections and sites, archaeological and otherwise, as well as chemical tests by Dr. G.G. Majumdar of the existing black soils and the fossil soils have shown that such soils develop only when there is considerable vegetation and a fairly good humid climate. That is, the rainfall must be around 30 inches per annum

.....

Clearance of such a forest by burning and felling of trees must have preceded the first occupation of the mound or the terrace. Presumably the trees were cut by copper and/or stone axes, though so far only five (four) of the former and only one of the latter—and that too from the surface—have been found."[1]

The structures, according to the excavators, were round or rectangular. They were built of round wooden posts. The wooden framework was further supplemented by spilt bamboo screen, plastered with brownish clay silt and cowdung and white-washed with lime. The floors were made of various materials like pure river silt, black-brown clay, and occassionally river gravel. They were given a lime coat.

Several samples of carbon from the site were examined and a date between *c.* 1600 and 1300 B.C. was assigned to the Chalcolithic Period of Navdatoli.

1. H.D. Sankalia, Prehistory and Protohistory of India and Pakistan, Poona 1974, p. 435.

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7. NAGDA[1]

Nagda is located on the bank of river Chambal in District Ujjain. The ancient site is about a mile from the railway station of the same name on the Delhi-Bombay route of the Western Railway. During the course of excavation at the seven meter high mound of Nagda, three Periods of occupation were distinguished. The first two belonged to Chalcolithic times.

The dominant ceramic industry of Period I was a red-or cream-slipped ware painted in various black designs. In rare cases the vessels were also painted in reddish brown or chocolate colour. Some of the important designs were horizontal bands, concentric semi-circles, connected loops, wavy lines, radiating lines, filled and hatched triangles, sun symbol and animal figurines of antlers, spotted deer and peacocks. Far less in frequency was the Black-and-Red or Cream Ware occasionally painted in oblique strokes or dots. It is essential to point out that there is hardly any difference between the Black-and-Red Ware and Black-and-Cream ware. The technique is the same in both the cases. The distinction, a minor one, can be accounted for by the difference of temperature at which they were fired. Crude grey ware was another important pottery of the Period. Notable antiquities of the Period were microlithic parallel-sided blades and fluted cores on chalcedony, quartz and carnelian; sling balls or pounder of stone; beads, whorls and animal figurines of terracotta. Copper was very much restricted in use.

Period II was distinguished from Period I primarily on the basis of Black-and-Red Ware. In Period I the exterior of the Black-and-Red Ware was considered to be cream, whereas in Period II the same was red. In all other respects Period II should be treated more or less as a continuation of Period I.

The houses at Nagda were quite large and spacious. They were made of mud-bricks. The excavator has postulated the existence of a rampart during Chalcolithic times at Nagda. The painted black-on-red ware so popular in the earlier Period was reduced to insignificance.

1. Indian Archaeology—A Review, 1955-56, p. 11.

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Bowls and basins constituted to be the important types in the Black-and-Red Ware.

Period III was characterized by the advent of the Northern Black Polished Ware. The Black-and-Red Ware disappeared completely.

The earliest occupation at Nagda was dated to 1000 B.C. In view of the later findings and their date at other sites, the date can be easily pushed back by at least three to four centuries.

8. UJJAIN[1]

The huge mound at Ujjain, a District headquarters in Madhya Pradesh was subjected to large scale excavation during 1957-58. The excavation at the Garh Kalika mound revealed a continuity of occupation at the site from *c.* 7th Century B.C. to the beginning of Muslim rule. The total deposits of about thirteen metres were divided into four successive Periods.

The characteristics of Period I were Black-and-Red Ware, black-slipped ware, fine red-slipped ware with a secondary black slip, slipped and unslipped vesiculated ware; bone arrow-heads; terracotta and semi-precious stone beads; iron knives, spear and arrow-heads and ivory mother goddess like object.

The shapes in the Black-and-Red Ware comprised rimless bowls and dishes with straight sides and flat or sagger base. Convex sided elongated bowl with a vertical or inclined rim and a pronounced cardon below is the only type represented in the double-slipped ware.

Black-and-Red Ware and black-slipped ware continued in limited quantity and for a short time in Period II, which was characterized by the Northern Black-Polished Ware. Among the important antiquities mention may be made of iron spear and arrow-heads; gamesmen of terracotta and ivory; ear-ornaments of terracotta and highly polished stones; ear-rings of copper; hair pin of ivory;

1. Indian Archaeology—A Review, 1956-57, 1957-58, pp. 20 and 32.

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pestles, mullers and grinders of stone; beads of agate; arrow-heads and knitting needles of bone; awls and seals of ivory.

The Black-and-Red Ware did not continue in the last two Periods.

9. AVRA[1]

The ancient site of Avra, eight kilometres west of Chandwasa in Mandsaur District of Madhya Pradesh is very important for the study of Black-and-Red Ware in the Malwa region. Six Periods of occupation were observed at Avra during the course of excavation. They were as follows :

Period I—Stone Age.

Period II—Proto-historic (Bronze or Chalcolithic).

Period III, IV and V—Early Historical.

Period VI—Medieval.

The present work is concerned only with Period II which yielded the painted Black-and-Red Ware. Amongst the other finds associated with it were painted black-on-red ware; microliths and a copper celt.

The beginning of the Proto-historic Period has been placed in the middle of the second millenium B.C. with probabilities of being slightly earlier. The end of the Period has been dated to 600 B.C. The chronology has been based on drawing equivalents from the sites of Maheswar and Navdatoli.

10. MANOTI[2]

Another ancient site of Manoti in District Mandsaur has brought to light seven Periods of occupation. The Black-and-Red Ware with paintings on the interior, is a characteristic of Period I,

1. H.V. Trivedi, Excavation at Avra, Journal of Madhya Pradesh Itihasa Parishad, Bhopal, No. IV, pp. 13-40.
2. Indian Archaeology —A Review, 1959-60, p. 25.

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having a deposit of a metre resting against a Harappan type defence wall. Period II has been distinguished by the appearance of the painted black-on-red ware. A massive mud-brick structure was very interesting. It might have served as a platform for raising structures for occupation as at Lothal and Rangpur. No specific date has been assigned to Period I.

11. KAYATHA[1]

The huge mound at Kayatha is located on the right bank of Choti Kali Sind, a tributary of the Kali Sind which in its turn, is the tributary of Chambal. Kayatha village is about twenty-five kilometres east of Ujjain on the Ujjain-Maksi road. Five Periods of occupation were distinguished at the site as a result of systematic excavation. They were as follows :

Period I—Kayatha Culture.

Period II—Ahar Culture.

Period III—Malwa Culture.

Period IV—Early Historical.

Period V—Sunga-Kushan-Gupta

Of the five Periods of occupation Periods II and III only have a bearing on this work, because of the occurrence of Black-and-Red Ware. The excavator felt that the inhabitants of Period II came from Rajasthan and that is why it was labelled as Ahar culture. Such an impression is based on the prolific use of Black-and-Red Ware, a characteristic of the Period. The ceramic is painted in white, usually on the exterior, but occasionally also on the interior of the vessels. The popular types in the Ware are a variety of bowls and dishes. The painted designs are mostly geometric, the patterns being groups of parallel, vertical and oblique lines and circles. The spiral design is rare. Incised lines or grooves on the neck have also generally been observed. Red-slipped ware with variants like tan,

1. Z.D. Ansari and M.K. Dhavalikar, Excavations at Kayatha, Pune 1975.

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orange, chocolate and brown-slipped, handmade coarse red/grey and a few sherds of Kayatha Ware, obviously an infiltration from the preceding Period are the other ceramic industries of the Period.

Amongst the important antiquities microliths represented by full-fledged blade industry; necklaces of shell beads; terracotta animal figurines of unique variety, short bicone beads bearing punctured designs, lamp, cake and sling balls deserve mention.

The painted Black-and-Red Ware continued in Period III. According to the excavator, the industry was undoubtedly a survival of the preceding Period. Bowls and dishes were of common shapes. The associated new ceramic industry was black-on-red painted pottery commonly known as the Malwa Ware, but the coarse, hand-made red and grey wares of the earlier Period continued. Microlithic blades were used by the people of this Period as well. Terracotta figurines of bull, naturalistic and stylized, beads of carnelian, agate, terracotta, shell, and glass; terracotta ear-stud, sling balls, spindle whorl; ring, rubber and hammer stones and stone sling balls, were the important antiquities of the Period.

Several C14 samples from the site were examined on the basis of which Period II was dated between *c.* 1700 and 1500 B.C. and Perion III between *c.* 1500 and 1200 B.C.

REGION C

The Black-and-Red Ware was considered to be of great utility in Region B, where it held a dominating position. In the area covered by Region C, the Ware was relegated to a subordinate position of being just an associate ceramic industry. The painted designs also are very much restricted as compared to Region B.

1. KAUSAMBI[1]

Kausambi was the capital of the kingdom of Vatsa, one of the sixteen Mahajanpadas of ancient India. According to *Puranas*,

1. Potteries in Ancient India, ed. B.P. Sinha, Patna, p. 203.

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Nichakshu, the great grandson of Janamejaya, shifted the capital from Hastinapur to Kausambi after Hastinapur was washed away by the Ganges. Kausambi is located on river Jumna not far off from Allahabad.

Black-and-Red Ware was reported from the earliest three Periods I to III at Kausambi in District Allahabad of Uttar Pradesh. In the absence of details available, it is not possible to present the characteristic features of each Period. A date between *c.* 1165 and 885 B.C. has been assigned to Period I. Black-and-Red Ware was also found in association with the Painted Grey Ware in Period II and Northern Black Polished Ware in Period III. They have been dated between *c.* 885 and 605 B.C. and *c.* 605 and 45 B.C. respectively. Painted Black-and-Red Ware fragments were very much restricted in number.

2. KOLDIHWA[1]

The recent excavations conducted at Koldihwa in District Allahabad of Uttar Pradesh by the Institute of Achaeology, University of Allahabad have brought to light very interesting and altogether new evidence on the Black-and-Red Ware. Koldihwa is a small village situated at a distance of about eighty kilometres southeast of Allahabad on the left bank of river Belan in the Meja subdivision.

The maximum thickness of the occupational debris, being 1.90 metres, was observed on the eastern fringe of the mound.

Three cultural Periods in all were distinguished at the ancient site during the course of excavation. The three Periods were designated by the excavator as : (1) Neolithic, (2) Chalcolithic and (3) Iron Age.

Period I : Representing Neolithic times, Period I was characterized by a corded ware of thick fabric, the plain red ware and the

1. V.D. Mishra, Some Aspects of Indian Archaeology, Allahabad 1977, pp. 107-119.

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crude Black-and-Red Ware. All the wares reported from Period I were hand made. Straw and rice husk were used as *degraissant*. The corded ware, a special feature of Neolithic times, predominated all the ceramic industries at the site. It is rather surprising to note that though the excavator agrees that the ancient site of Chirand in District Saran of Bihar has an identical cultural sequence, he categorically remarked that Chirand did not yield corded ware. The excavator said, "The corded ware, an essential feature of the Neolithic Koldihwa, is absent at Chirand"[1]. Corded ware is found at Chirand as well.

The percentage of the various ceramic industries at the site was, corded ware—69.27 per cent; plain red ware—28.15 per cent and Black-and-Red Ware 2.58 per cent only. Unlike Chirand, the Neolithic pottery from Koldihwa was devoid of any painting. Decoration is restricted to corded patterns and incisions comprising criss-cross, zig-zag, oblique, horizontal or vertical parallel lines. Finger prints were also observed on a few sherds. A few pots were burnished.

Generally thick in fabric, the corded ware of Koldihwa was dull yellowish in colour. Fragments of thinner fabric were very restricted in number. Plain red ware was also produced in both thick and thin fabric. An ochrous slip was applied on both the surfaces. Shallow, deep, straight-sided and lipped bowls, basins, vases with broad mouth and carinated neck, deep trough, storage jars and vessels with tubular spouts were the main utilitarian types in the pottery.

The excavator was not in a position to assess the exact nature and type of the Black-and-Red Ware, since the sherds were all too fragmentary. They were also ill-fired.

Amongst the associated antiquities of the Period, mention may be made of rounded celts with flat sides and rectangular cross-section; microlithic parallel-sides blades, blunted blades and scrapers in chert,

1. V.D. Mishra, Some Aspects of Indian Archaeology, Allahabad 1977, p. 116.

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chalcedony, agate, carnelian, jasper and quartz; querns and mullers. No bone tools have been reported.

Domestication of animal has been presumed by the excavator on the basis of the evidence of the ancient site of Mahagara, just opposite Koldihwa on the right bank of river Belan. The use of domesticated variety of rice has been confirmed by the examination of rice husk impressions on the pottery.

No structural remain was observed during the course of excavation. Occurrence of burnt clay pieces with wattle and daub impressions have, however, led the excavator to believe that the Neolithic people lived in thatched houses made of bamboo and wooden post with mud-plastered screen walls.

Period II: The succeeding cultural Period at the site was Chalcolithic, represented by a metre thick occupational debris. Corded ware and fragments of some small-sized Neolithic celts made in basalt of the preceding Period continued to occur in this Period, though in a limited quantity. Though certain marked innovations in pottery and antiquity were observed by the excavator, he was not certain regarding the people who brought about the change in the cultural pattern. According to him, they were either the Neolithic people of the preceding Period who evolved a new cultural pattern at the site or an altogether new stream of people arrived at the scene after sometime to introduce the new Chalcolithic Culture.

Period II was distinguished by the occurrence of Black-and-Red, black-slipped and ordinary red wares. Use of the wheel for producing pots out of well levigated clay, multiplication of shapes and the use of sand as tampering material and painting were some of the new features completely unknown in Period I. The fabric, firing and finish of the pots also presented a marked improvement. Bowls, shallow and convex-sided dishes, basins (plain and lipped), funnel-shaped lids, medium-sized vases, troughs, big storage jars, footed and perforated vessels were some of the types represented in red ware. The shapes in black-slipped ware were restricted to bowls (some of which were pedestalled), dishes, basins and funnel-shaped lids. Bowls

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(including pedestalled ones), dishes, lipped and plain basins, small vases, straight-sided troughs and funnel-shaped lids were the shapes produced in Black-and-Red Ware. According to the excavator, only small and medium-sized pots were produced in the black-slipped and Black-and-red wares, of which the former happened to be the table ware of the Period. The assumption is based on the shining surface of the black-slipped ware.

The red ware was occasionally painted in black on the exterior surface. The designs were limited to thick horizontal bands, strokes and zig-zags. A restricted number of the Black-and-Red Ware fragments were also painted internally in white pigment. The motifs consisted of oblique strokes and dots only. The most interesting and altogether new feature in the Black-and-Red Ware is the confinement of the painting exclusively to the incised cavities, a combination of incision and painting. Decoration, otherwise, was scarce.

Microliths and bone tools were the main antiquities of the Chalcolithic Period. The microliths comprised cores and flakes and finished tools in the form of parallel-sided blades, blunted-back blades, points, lunates, scrapers and triangle on chert and chalcedony. In bone tools, arrow-heads, both of socketed and tanged variety, were found in a great quantity. Engraved circlets were a marked feature on the socketed variety of arrow-heads. The other finds from the Period included fragmentary copper pieces; beads of terracotta, bone, shell and semi-precious stones and fragments of quern and muller. One of the copper pieces is a broken blade with a very thin section.

Animal bones, most probably of *Bovid*, with cut marks were also reported in a great quantity.

Though not entirely absent, structural remains in the Period were very scanty. On the basis of the available evidence, the excavator felt that the Chalcolithic people lived in houses of wattle and daub, for which wooden posts were used. As a safeguard from bad weather, screen-walls of reed and bamboo were also constructed. The screen walls were, in all likelihood, plastered on both sides.

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The Chalcolithic people of Koldihwa cultivated rice. The other items of diet were meat and fish.

Period III : The Chalcolithic Period was followed by the Iron Age Culture without any break. The ceramic industries of the Period included plain and slipped-red wares, black-slipped ware and the Black-and-Red Ware. The functional and typological shapes, according to the excavator, were identical with their counterparts of the Chalcolithic Period, with the exception that no sherd of corded ware was reported from the Period.

Unperforated axe and an arrow-head in iron, besides crucibles and iron slags were found in Period III. The introduction of iron did not lead to any revolutionary change in the cultural pattern of the people. Bone arrow-heads, mostly of double-pointed, socketed and barbed and bone caps to secure bone points; fragments of quern, both saddle and footed; worn out mullers; beads of terracotta and semi-precious stones and charred grains of wheat, rice and *moong* were the other finds from Period III.

The structural remains of the Period were restricted to floors, partly burnt, along with an open circular hearth and a single-mouthed *chulha.*

The Neolithic complex *i.e.*, Period I at the site has not been dated on the basis of C14 determination. The radio-carbon dates are, however, available for the early Chalcolithic Period of Koldihwa. They are 5440±240 B.C. and 4530±185 B.C. In view of such an early dating for the Chalcolithic Culture, the excavator has derived certain hazardous hypothesis. He said, "It is not unlikely that the Neolothic culture of Assam and adjoining areas might have a more respectable antiquity than assigned to it so far. In that eventuality, the Neolithic culture of the Belan valley, probably a derivative from the Neolothic complex of Assam with which it shares rounded celts and corded ware, may claim a similar high antiquity."[1] There is no justification for such a hypothesis, since a large tract between Assam and

1. V.D. Mishra, Some Aspects of Indian Archaeology, Allahabad 1977, p. 117.

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Uttar Pradesh is still unexplored and the Neolithic-Chalcolithic sites excavated in Eastern India are only numbered.

3. RAJGHAT[1]

The ancient site of Rajghat on the bank of river Ganga opposite Varanasi in Uttar Pradesh is well known. Large scale excavations at the site have revealed a continuous occupation from the first half of the first millenium B.C. to 1700 A.D. The entire cultural remains were divided into six Periods with three subdivisions in the earliest.

Sub-Period IA was respresented by the plain and painted Black-and-Red, black-slipped, ochrous red, red and grey wares. The Black-and-Red Ware was more abundant in the lower layers, but gradually diminished in later strata. The black-slipped ware seems to be the earliest industry. Some of the sherds were painted on the inner surface in white designs. Bowls with everted or straight-edged rim, convex or tapering sides are the important types. The designs are restricted to strokes and dots. Grey ware, though not painted, is of such a fine fabric as to resemble the Painted Grey Ware. A red ware sherd showing painted design in white, executed by the multiple brush techniques deserves special attention. Amongst other finds, mention may be made of iron objects and microliths.

Sub-Period IB was marked by the advent of the Northern Black Polished Ware in all its shades including the painted variety. The wares of the preceding sub-Period continued, but in a diminishing order. The other finds consisted of beads, terracotta animal figurines and discs and a few objects of iron.

Sub-Period IC was characterized by the deterioration in the quality of the pottery such as the coarsening of the fabric and indifferent finish of the Northern Black Polished Ware. A number of cast coins of copper, besides beads and terracotta balls have also been recovered from this sub-Period.

1. Indian Archaeology—A Review, 1957-58 and 1960-61, pp. 50 and 35.

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In the suceeding five Periods the Black-and-Red Ware was completely absent.

The three sub-Periods of Period I have been dated as follows :—

IA—*c.* 800-600 B.C.

IB—*c.* 600-400 B.C.

IC—*c.* 400-200 B.C.

4. SOHGAURA[1]

The small scale excavation at the ancient site of Sohgaura near Gorakhpur in Uttar Pradesh revealed four Periods of occupation.

Period I was characterized by a painted and plain Black-and-Red, grey and black-slipped and painted black and grey wares. Not unlike other sites the types in Black-and-Red Ware were restricted to bowls and dishes. Though paintings on the exterior surface are not wanting, they are generally executed on the interior only. The designs are linear and comprise vertical bands often interposed with thicker bands, horizontal, oblique or radiating lines and concentric semi-circles.

While the ceramic industries of the preceding Period continued, Period II was distinguished by the appearance of the Northern Black Polished Ware. It is not clear from the short report in Indian Archaeology—A Review, 1961-62, whether the painted variety of the Black and Red Ware also continued. Taking into consideration the evidences from other sites, it can very well be presumed that only the plain variety of the Black-and-Red Ware must have continued.

The Black-and-Red Ware disappeared completely from the succeeding two Periods.

The beginnings of Period I can be safely dated to *c.* 1100 B.C., though no C14 dates are available.

1. Indian Archaeology—A Review, 1961-62, p. 56.

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5. CHIRAND[1]

Chirand in District Saran of Bihar is the pre-eminent site in Eastern India for the study of the Black-and-Red Ware. For the first time the ceramic was found to occur in a Neolithic context. The excavations at the ancient site have established four Periods of occupation with a sub-division in Period II.

Period I represented a full-fledged Neolithic Culture, the equipments of which included Black-and-Red Ware as one of the ceramic industries. The Neolithic deposit was very rich in antiquities which comprised a variety of bone objects like needles, point, borers, pins, styluses, tanged and socketed arrow-heads, pendants, personal ornaments like bangles (prepared out of tortoise bone), reel-shaped objects such as celts (two long examples); pestles, balls, querns, hammers etc. of stone; microliths, including parallel-sided blades, scrapers, tanged arrow-heads, points, lunates and borers; beads of chalcedony, agate, jasper, steatite and faience, including a few unfinished ones indicating local industry; terracotta figures, showing humped bulls, birds and *naga*; and other terracotta objects like bangles, marbles, perforated discs, perhaps used as spindle whorls, toy-cart wheels, pendants with incised and punctured decoration. The ceramics used by the Neolithic people were red, grey, black and Black-and-Red wares. It is interesting to note that the entire ceramic complex of the Neolithic Period was hand made. According to the excavator the forms and the fabric of the Black-and-Red Ware varied completely from those of the succeeding deposits of the Chalcolithic Period. Some of the grey ware pots were burnished, whereas others were rusticated. The neck-portion of the vases in this fabric was often decorated with applique designs to conceal the luting. Post firing graffiti were also noticed on some of the pots. Mat impression on a sherd indicated the use of mats prepared out of reeds. The shapes represented in different wares included : (*i*) vases, sometimes spouted, (*ii*) bowls, occasionally lipped or perforated or having channel spout, and (*iii*) footed cups, etc.

1. Indian Archaeology—A Review, 1963-64, p. 6 and also Potteries in Ancient India, ed. B.P. Sinha, Patna 1969, p. 100.

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A post firing painting in ochre was very often observed on the grey ware. This feature was common in Red and Black-and-Red wares as well. The design repertoire was essentially linear, such as criss-crosses, concentric semi-circles and rim-bands.

Rice was the staple food of the Neolithic people. Though agriculture was very well practiced in the Period, bone tools in plenty indicate that hunting was also a source of subsistence.

The earliest occupation of the Neolithic Period has been dated to 2000 B.C. taking into consideration 3.50 meters thick deposit below the Chalcolithic Culture, which was dated to 1650 B.C. on the basis of C14 tests. Vishnu Mittre thinks that the bottom layers of Chirand Neolithic may be dated around 4000-3000 B.C. (Palaeobotanist, Vol. 21 (1).[1]

Period IIA was characterized by the restricted use of copper, microliths and painted Black-and-Red Ware. The painted motif on the bowls and dishes of the Black-and-Red Ware included group of dashes, wavy and straight lines in dirty white pigment. Vases were painted on their necks and shoulders in creamish-white colour. Other ceramic industries of the Period included plain and painted black ware and a few fragments of steel grey and red wares. Terra-cotta *ghata*-shaped and chalcedony beads and bone arrow-heads, both of tanged and socketed variety, were some of the important associated antiquities.

Iron was introduced in the top layer of Period IIB. The assemblages of the preceding sub-Period, otherwise, are said to have remained unchanged. Further investigation to demarcate the Periods and sub-Periods is essential to confirm the above issue, because the association of iron with the antiquities mentioned above is unusual. The antiquities of Period I and IIA also need close study for the clear cut demarcation of the Periods.

1. B.P. Sinha, Archaeology and Art of India, Delhi 1979, p. 51fn.

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Period III was distinguished by the advent of Northern Black Polished Ware in different shades. The Black-and-Red Ware continued in this period but disappeared from the succeeding Period IV.

6. SONPUR[1]

The excavations at Sonpur, also known as Sinitpur, in District Gaya of Bihar have revealed three cultural Periods with the earliest sub-divided into two viz. IA and IB. The ancient mound is locally known as Banaswra Ka Garh. The total occupational debris at the mound is 6.70 metres.

Period IA

It was characterised by crude Black-and-Red Ware, red ware and black ware, usually hand made. The Black-and-Red Ware held a dominant position over the other two wares. The black portion of the Black-and-Red Ware is smooth, whereas the red is dull.

Metal was represented by a solitary specimen of copper wire. Iron did not occur at all. Arrow-heads (both socketed and tanged), stylus or pins etc., in bone were the other antiquities. According to the excavator animal bones in a fairly large quantity indicated that the inhabitants were non-vegetarian. He is of the opinion that by arrow-heads they killed birds and animals and by pins they must have weaved fishing-nets.

Agriculture was known. No structural remains came to light.

Period IB

This sub-Period was distinguished by the occurrence of finer potteries, invariably wheel made and occasionally well polished. With the Black-and-Red Ware, a few black ware fragments were also observed. The designs on the Black-and-Red Ware were parallel strokes and zig-zag lines executed in white pigment. A few large-sized urns of reddish colour with bone pieces suggested the practice of urn burial.

1. B.P. Sinha and B.S. Verma, Sonpur Excavation, Patna 1977.

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Copper objects in restricted quantity reflected the poor economy. Iron, though absent in the lower levels, was found in the form of lumps of ore and slags in the upper-most levels.

Bone artifacts continued to be in use. Arrow-heads, pins and stylus were found in a fairly good number. The number of unfinished tools exceeded the finished ones. A few Neolothic tools have also been reported. Beads of terracotta and semi-precious stones constituted to be the other finds.

The economy by way of agriculture had advanced. A few post-cremation burials were also observed. A limited number of circular pits pointed to the existence of circular huts. These circular pits yielded microlithic cores and flakes in a very restricted quantity.

Period II

It marked the appearance of Northern Black Polished Ware. A sophisticated variety of Black-and-Red Ware was produced. Iron implements were quite popular. A human face made of crystal was the most important find. Of immense interest was a terracotta standing female figure with a peculiar head-dress and an elegant skirt. A moulded red-terracotta fragment of a bull with a medallion on its strap, representing two seated human figurines (one male and the other female), was also a valuable find. Other minor antiquities included beads of semi-precious stones, bangles and rings of different materials.

Ascribable to this Period were also a dozen polished stone axes of different shapes and sizes.

Period III

The occupation of Period II was destroyed by a fire and the site came under occupation again after a lapse of time. The cultural equipments completely changed. The Black-and-Red Ware and the Northern Black Polished Ware were no longer in use.

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The following dates have been assigned to various Periods on the basis of C14 tests and comparative analysis :

Period IA : 1100-1000 B.C.

Period IB : 1000-600 B.C.

Period II : 650-200 B.C.

Period III : 200 B.C.-200 A.D.

7. PANDU-RAJAR-DHIBI[1]

The excavations at Pandu-Rajar-Dhibi on river Ajay in District Burdwan of West Bengal have brought to light four Periods of occupation. The first two Periods were Chalcolithic and succeding two early historical.

Period I was characterized by fractional burials, small fragments of Black-and-Red Ware, chocolate ware with whitish painting (in the top levels), a pale red ware and microliths. The report is completely silent regarding painting on the Black-and-Red Ware, which is really surprising.

Days of prosperity in Period II were evident from the variety of painted pottery. A rich assemblage of Lustrous Red Ware, painted in black and Black-and-Red Ware painted in transulent white deserve special reference. The former is represented by bowls with straight extended rims and convex sides. They are painted in motifs like solid triangles, wavy lines, simple bands, sometimes joined by uprights, lattices, hatched lozenges and a leaf or wavy line flanked by sigma. The paintings on the Black-and-Red Ware are restricted to the interior black glossy surface and consist of chevrons, dots, sigmas, hyphens and small strokes. Channel spouted bowl in the ceramic recall Central Indian Chalcolithic Culture. The hemispherical lids used in burials are also very interesting. Certain other types in the Ware are represented by dishes, inverted helmet-shaped globular vases with extended rims and conical basins with a cluster of perforations at the bottom. Microliths and copper continued to be in use in Period II.

1. P.C. Das Gupta, Excavations at Pandu-Rajar-Dhibi, Calcutta 1964.

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The statement of Das Gupta that Period III remained almost the same appears to be inconsistent with the antiquities of the Period. Polished stone axes and iron implements, which play a very important role in the economy of the people have not been taken into consideration at all, though they form the main diagnostic traits of the Period. The excavator appears to have arrived at the conclusion only on the basis of the continuity of the Black-and-Red Ware and microliths. He has not even cared to mention whether the painted Black-and-Red Ware is stratigraphically earlier than the polished stone axes and iron as observed at Sonpur. Copper bangles, rings and a fish hook are some of the important antiquities.

Period IV did not yield Black-and-Red Ware and hence need not be dealt here.

A redistribution of five Periods into four by the author at a later stage has led to a great confusion in the dating of the site. Tata Institute of Fundamental Research has dated a sample from Period V to 1260±110 B.C., whereas Jadavpur University has dated Period II to 1012±120 B.C. In the circumstances of confusion, the only way out seems to be to take shelter of the comparative study of the antiquities. On the basis of this study, the earliest occupation at Pandu-Rajar-Dhibi can be placed in the later half of the second millenium B.C.

8. MAHISDAL[1]

The cultural deposit on the five-metre high mound at Mahisdal in District Birbhum of West Bengal was restricted to two metres only, which revealed two Periods without any break.

Period I was characterized by Black-and-Red Ware, plain or painted in white as well as in black, black-painted red ware, red ware bearing incised fillets, plain red ware and black ware, sometimes with incised and pin-hole decorations. Painted designs included oblique strokes, sigmas and interconnected loops. Other associated finds

1. Indian Archaeology—A Review, 1963-64, p. 59.

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comprised microliths consisting of scrapers, lunates and short blades; a flat copper celt with a convex cutting edge; terracottas, including a realistic phallus; tetrahedral objects, probably weights; bone objects, including pins; fragment of a decorated comb; and bangles and a number of beads of semi-precious stones and steatite. A large quantity of charred rice was also discovered.

Period II marked the advent of iron which was used in manufacturing arrow-heads, spear-heads, chisels and nails. A large quantity of iron ore and slag were also found. The ceramics of the earlier Period continued, though of course, in a coarse fabric. Buff and grey wares were the new ceramics introduced. A single sherd of coarse grey with bold smudgy, strokes also occurred. A clay sealing, microliths and terracotta figurines were the associated antiquities.

A date of 1380±855 B.C. has been assigned to Period I after an examination of C14 samples.

9. HARAIPUR[1]

The excavation at Kolkhanda mound near village Haraipur in District Birbhum of West Bengal has brought to light a single period of occupation. The cultural deposit was represented by plain and painted Black-and-Red Ware; a local grey ware and red-slipped ware. The painting on the Black-and-Red Ware was executed both on the outside and inside. Ten extended burials of children, oriented north-south, with the heads slightly inclined towards the west were also encountered.

REGION D

The present group covers the Black-and-Red Ware, which has been found mainly in the Indo-Gangetic basin and is contemporaneous, in almost all the cases, with the Painted Grey Ware. As it has already been observed in the context of Harappan Black-and-Red Ware, the types at different sites in this group are an imitation of the dominating ceramic industry viz., the Painted Grey Ware. Another

1. Indian Archaeology—A Review, 1964-65, p. 46.

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characteristic of the Ware in this region is its invariable occurrence in succession to the Harappa Culture, as proved by the well known sites of Rupar and Alamgirpur.

1. RUPAR[1]

In all five Periods of occupation were distinguished at the huge ancient mound of Rupar in Ambala District of Punjab. Each succeeding occupation started only after a break and gap of a few centuries.

Period I represented the Harappa Culture, but was devoid of any Black-and-Red Ware, though the same was present at Lothal.

Period II was characterized by the Painted Grey Ware. The Black-and-Red Ware is also found in the Period. Details regarding the types are not available, but on the basis of the evidence at other sites it can be presumed that they are restricted to bowls and dishes with straight or convex sides, sometimes having a carination at the shoulder.

The Black-and-Red Ware has not been reported from the later three Periods.

2. ALAMGIRPUR[2]

There is hardly any difference between the sequence observed at Rupar and Alamgirpur in District Meerut of Uttar Pradesh. Instead of five, there are only four Periods at Alamgirpur.

As at Rupar, Period I was typically Harappan. The Black-and-Red Ware is found in Period II only, which was characterized by the Painted Grey Ware. Black-slipped ware also occurred in the Period. The important types in the black-slipped, Painted Grey and Black-and-Red wares are bowls, usually with straight sides and a flattish base, and dishes with sides incurved and bluntly carinated to meet a mildly convex base. A Black-and-Red Ware bowl with a convex base had a grooved carination at the shoulder. Copper objects, iron

1. Indian Archaeology—A Review, 1953-54, p. 7.
2. *Ibid.*, 1958-59, p. 52.

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spear-heads, barbed arrow-heads, and nails or pins; bone styli, pins and arrow-heads; glass beads, and terracotta toys are some of the important antiquities.

The last two Periods did not yield Black-and-Red Ware.

3. HASTINAPUR[1]

Hastinapur was the capital of the Kurus in Mahabharat times. According to *Puranas*, the capital was shifted to Kausambi by Nichaksu, great grandson of Janamejaya after a devastating flood in the Ganges, which washed away Hastinapur.

The cultural deposit at Hastinapur in District Meerut of Uttar Pradesh was divided into five Periods. Period I was distinguished by rolled fragments of ochre-coloured ware. There was no Black-and-Red Ware in the Period.

Period II was represented by the Painted Grey Ware. A few fragments of Black-and-Red Ware were also found in the Period. The only type illustrated in the report is a bowl with a vertical sharpened rim, grooves on the shoulder and a carination towards the base. The other associated ceramic industries include black-slipped, red-slipped and ordinary red wares. Among the important antiquities of the Period, mention may be made of copper arrow-head, nail pairer, borer (?) and antimony rod; iron slags in the topmost levels; chert and jasper weights; glass bangles; terracotta animal figurines; and bone styli or knitting needless.

Period III marked the advent of the Northern Black Polished Ware and the Black-and-Red Ware was no longer used.

Period II, in which the Black-and-Red Ware occurs, has been dated between 1100 B.C. and 800 B.C. The charcoal samples from the Period which were examined by the Tata Institute speak of a much later date, though the samples belonging to the same Period from Atranjikhera (District Etah, U.P.) confirm the above mentioned

1. B.B. Lal, Excavations at Hastinapura, Ancient India Nos. 10 and 11.

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date. A late date for the samples from Hastinapur may be on account of some contamination.

4. SRAVASTI[1]

The excavation at the well-known ancient site of Sravasti in District Bahraich of Uttar Pradesh has brought to light three cultural Periods. Period I was distinguished by the Painted Grey Ware, Northern Black Polished Ware, polished black ware, Black-and-Red Ware and red ware. Painted pottery in a very limited quantity was also one of the characteristic. It comprised black-on-ash grey (Painted Grey Ware), buff-on-black, black-on-brownish grey, black set off against red and red-on-red. A few fragments of red ware have incised designs like chevrons, criss cross, ripple marks and zig-zags. Some of these designs recall the painted designs found in the Chalcolithic levels at Navdatoli. The Black-and-Red Ware is represented by bowls and dishes. One of the bowls is having a small beaded rim and carinated shoulder. Among the important antiquities, mention may be made of copper borers, pin, pendant, bangles, nail-pairer and antimony rods; glass bangles; beads of agate, carnelian and terracotta; bone and ivory arrow-heads and bone flesh-rubber; terracotta animal figures; decorated discs of terracotta bearing symbolic representation; glass eye-beads; and beads of copper, bone, shell, amethyst, lapiz-lazuli and jasper.

The subsequent two Periods have not yielded Black-and-Red Ware.

On the basis of comparative study the excavator has dated Period I between the middle of the sixth century B.C. to 300 B.C.

5. ATRANJIKHERA[2]

The ancient site of Atranjikhera occupies an important position in the study of Black-and-Red Ware in the Indo-Gangetic basin. This is the first site which has brought to light a clear-cut deposit of Black-and-Red Ware superimposed by the Painted Grey Ware.

1. K.K. Sinha, Excavations at Sravasti, Varanasi 1959.
2. Indian Archaeology—A Review, 1962-63 and 1963-64, pp. 43 and 45.

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The excavation established three Periods of occupation distinguished respectively by the occurrence of the ochre-coloured ware, the Black-and-Red Ware and the Painted Grey Ware.

Period I was dated to the middle of the second millenium B.C. It was characterized by the ochre-coloured ware with indifferent firing, thick and porous sections, rolled edges and a bright ochreous wash, which easily rubs off. Important shapes in the ware are dish-on-stand, pedestal, handles, channel-like spout of some large vessels, deep basin or bowl and vase with chord-like collar at the neck. A special feature of the ware at this site was the incised decoration showing lines on applied chords, dashes, deep dots and notches, arranged in straight, oblique, angular or wavy lines.

Period II was distinguished by the use of Black-and-Red Ware, microlithic flakes and cores and copper. Among the associated ceramics, mention may be made of black-slipped, grey, red-slipped as well as plain red wares. Of all the ceramics, the Black-and-Red Ware and black-slipped ware, which constituted nearly forty-five percent of the total, were usually of a fine fabric and were represented mostly by bowls and dishes. Some shapes, however, were exclusive to each ware. The Black-and-Red Ware was devoid of any painting. Besides, a coarse and perphaps hand made Black-and-Red Ware was also reported. A few pots in this Ware appeared greyish in surface-colour, largely due, perhaps, to ill firing. The red ware, both slipped and unslipped, was represented by vase, bowl, basin, dish, miniature bowl etc. A few bowls carried painted decoration.

The associated antiquities of the Period comprised carnelian and shell beads; two copper objects including an ear-ring; a bone comb; fragment of a pestle; and a large number of flakes of chalcedony, agate, etc., and cores with ripple flaking.

Period III saw the emergence of the Painted Grey Ware. Plain grey, Black-and-Red, black-slipped, red-slipped and coarse grey wares were also in use. It is significant to note that while some of the shapes of the Black-and-Red Ware were similar to those obtained in

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Period II, there were a few others which were comparable with those in Painted Grey Ware.

Amongst the finds, special mention may be made of the occurrence of iron objects, the objects being spearheads, arrow heads, knives, chisels, hook etc. Copper rings and bangles, hooks and chisels; terracotta discs, bearing incised patterns; bone styluses, awls, knitting-needle, gamesmen or weights etc.; net-sinkers, pestles and a large number of beads of terracotta and semi-precious stones constituted other important antiquities.

On the basis of C14 analysis of certain samples, Period II has been dated to 1025±110 B.C.

6. NOH[1]

The evidence obtained from the excavation at Noh in District Bharatpur of Rajasthan is very much in conformity with those at Atranjikhera. Five cultural Periods were distinguished at the site.

Period I was characterized by the Black-and-Red Ware fragments in addition to grey and decomposed ochre-coloured wares. The excavator has categorically remarked that this Black-and-Red Ware is entirely different from those found at Ahar in Rajasthan. The strata of the ochre-coloured ware could not be isolated.

Period II was represented by the Painted Grey Ware, though of course, the Black-and-Red Ware continued. Details regarding the types in this ware are not available. Among the limited antiquities of the Period, mention may be made of beads of terracotta and semi-precious stones including etched carnelian and terracotta disks. No iron has been reported, but before arriving at any definite conclusion, further investigations are necessary.

The last three Periods did not yield Black-and-Red Ware. Period II has been dated to 820±225 B.C. on C14 determinations.

REGION E

The present group can claim the pride of providing a connecting link between the Chalcolithic Cultures of Central India and Megalithic

1. Indian Archaeology—A Review, 1963-64, p. 28.

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cultures of South India. The most important site in this respect is Tekwada, which has yielded both the painted Black-and-Red Ware, a characteristic of Central Indian Chalcolithic Cultures as well as Megalithic burials. Tekkalkota in Siruguppa taluka of Bellary District in Karnataka is another notable site to provide a link.

1. PRAKASH[1]

Prakash is an important site in District Dhulia of Maharashtra, where we get a connecting link between the Chalcolithic Black-and-Red Ware and the Megalithic Black-and-Red Ware from Brahmagiri.

The cultural deposit at Prakash was divided into four Periods with a sub-division in Period I. The first two Periods only yielded the Black-and-Red Ware. Though, of course, the technique of manufacturing the ware is the same, the Black-and-Red Ware of sub-Period IA was labelled as black-and-grey on account of the texture of the exterior surface. Besides the black-and-grey ware, Period IA was characterized by pale grey, black-painted red, coarse-burnished grey and blotchy grey wares; microlithic blades, some of them serrated and backed, points, lunates and trapezes; stone spheroid balls; beads of carnelian, shell and paste including distinctive spacer and a chisel-ended tooth-pick or pendant; curious terracotta borers; painted terracotta toy-cart wheel and a painted terracotta bull.

Period IB was distinguished by the introduction of two more ceramics. They are the Jorwe Ware and the Lustrous Red Ware. Other characteristics continue to be the same. The shapes in the so-called black-and-grey ware which also continues are limited to : (*i*) deep spheroid or ovoid bowl with out-turned rim and convex body, (*ii*) *lota*-shaped vase, and (*iii*) vase with pronounced or ledged shoulder. They are painted in a variety of designs like obliquely converging lines in groups of one to four, groups of dots, dashes, herring bones and short meanders. A single sherd of the white painted Black-and-Red Ware of Ahar fabric deserves particular attention for a comparative study. Certain designs like dots, short slashes and group of vertical lines are common in both the sub-Periods.

1. B.K. Thapar, Prakash 1955, Ancient India Nos. 20 and 21, New Delhi 1965-66.

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Periods IA and IB have been dated between *c.*1700 B.C. and 1300 B.C. on the basis of comparative study.

There is a break in occupation after Period IB. The succeeding Period II starts only after a lapse of six to seven centuries. The Period was marked by the advent of iron, which played a vital role in transforming the culture into an urban one. Copper, no doubt, continued to be in use, but it was subordinated to the use of iron. Amongst the ceramic industries, plain Black-and-Red and Northern Black Polished Wares were the most important. The latter is found only towards the close of the Period, whereas the former is dominant in the earlier levels waning consistently in the later levels. Bowls and dishes with tapering or straight sides, blunt-carinated shoulder and normally flat base are the common forms. Some of the dishes are having an incurved rim. Small globular vases and bowl with a multi-grooved profile are interesting. The other antiquities included knife blades, ferules, sickles, nails, clamps, arrows and spear-heads, celt-like and axe-like axe-heads etc., of iron; copper bangles, rings and an antimony rod; shell and glass bangle fragments; ivory comb; bone styluses; pulley-shaped ear ornaments; beads of terracotta, quartz, rock crystal, carnelian, agate, jasper, coral and bone; and grinding stones, or querns along with pestles and rubbers of stone. Two badly corroded punch-marked coins from the late levels are, however, noteworthy.

Period II has been dated between *c.* 7th century B.C. and 2nd century B.C.

2. BAHAL & TEKWADA[1]

The ancient sites of Bahal and Tekwada are located in Jalgaon District of Maharashtra. The last excavation at Bahal in 1956-57 brought to light five Periods of occupation with breaks between Periods I and II and III and IV.

Period I was sub-divided into IA and IB, both of which represented all the characteristic features of the Chalcolithic Cultures of

1. Indian Archaeology—A Review, 1956-57, pp. 17-19.

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Central and Western India. It is very surprising to note that not a single fragment of the Black-and-Red Ware has been found in either of the sub-Periods, particularly when the same occurs in the levels equivalent to IB at Tekwada. The ancient site of Tekwada is situated just opposite Bahal. One of the burials at Tekwada yielded painted Black-and-Red Ware, which was placed at the feet of the skeleton. This is the only site, so far excavated in India, where painted Black-and-Red Ware has been found in a Megalithic burial. Another interesting feature is the absence of iron from the burials.

The facts mentioned above can play a role of vital importance in establishing cultural relationship between the Chalcolithic and Megalithic Cultures of India. Besides the painting on the Black-and-Red Ware, a characteristic of Chalcolithic Cultures, the types of the Black-and-Red Ware used for funerary purposes at Tekwada are in no way different from those found at Brahmagiri. Almost all the vessels of Black-and-Red Ware at Tekwada are elongated deep bowls with incurved rim and carinated shoulder, which are characteristic of the Megalithic burials at Brahmagiri. The burials at Tekwada have been equated with Period IB at Bahal on the basis of the painted black-on-red ware of the Chalcolithic facies. Besides the painted animal figures on this ware, the other important finds of the sub-Period included a few sherds of the Lustrous Red Ware; beads of terracotta, shell and paste; microliths of chalcedony, agate and jasper, mostly parallel-sided blades, sometimes serrated and less frequently lunates and trapezes; terracotta combs and hones; and a limited number of copper objects. Carinated bowl and spouted vessel of the Nasik-Jorwe type and a few sherds of burnished grey ware occurred in the upper levels of the sub-Period.

It may be pointed out that the globular jar with flaring rim in Period IA at Bahal is reminiscent of Brahmagiri burial urn.

The emergence of iron in Period II brought about a complete change in the life of the people. The Black-and-Red Ware, however, continued to be in use, with the red exterior surface occasionally changed to buff or cream. The surface of the vessels was highly

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burnished and the common shapes were rimless bowl and shallow dish. In the associated red ware with a gritty core, the common types were globular jar and carinated *handi*. Highly polished faceted beads of carnelian, jasper, crystal and opal; ear ornaments of agate with mirror-like polish; iron spear-heads, arrow-heads, knives, daggers, sickles etc., were some of the other important finds.

Period III, as already stated, was sub-divided into A and B. Sub-Period IIIA was characterized by the Northern Black Polished Ware, whereas IIIB by the Red Polished Ware. The Black-and-Red Ware as such, without the variants of a buff or cream exterior as in the preceding Period, survives only in sub-Period IIIA. Gritty red-slipped ware with a crackled surface was another important ceramic of the sub-Period. The antiquities consisted of beads of agate, carnelian and bangles of crystal and shell.

In the absence of any C14 dates, the dates assigned by the excavator are to be accepted. He has dated Period II between *c.* 600 B.C. and 300 B.C. How much earlier the beginnings of Period I can be placed is a matter of speculation. However, on the basis of comparative study, they can safely be placed in the earlier half of the second millenium B.C. The burials at Tekwada, which have been equated with sub-Period IB at Bahal must, therefore, be dated to about 1700 B.C. This is a very good evidence to prove that the Megalithic burials in India had a much earlier beginning than *c.* 200 B.C., as assigned by Wheeler. When the Megalithic burials can be so early, naturally the Black-and-Red Ware used in them as funerary vessels must also be of a much earlier date.

Period III has been dated between *c.* 300 B.C. and A.D. 100.

3. BAHURUPA[1]

The evidence from the ancient site of Bahurupa in District Dhulia of Maharashtra is in agreement with Prakash, already described. As at Prakash, the painted Black-and-Red Ware with designs

1. Indian Archaeology—A Review, 1959-60, p. 34.

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of vertical strokes or dots is one of the characteristics of the Chalcolithic complex. Like Prakash, the exterior surface of the Black-and-Red Ware at Bahurupa is greyish instead of red.

4. SAWALDA, NASIK AND JORWE[1]

The evidence from all these sites is very much similar. Plain Black-and-Red Ware has been found at all these sites in Period II, which also marks the advent of iron. An appreciably earlier beginning of this Ware than the Northern Black Polished Ware has been proved both at Prakash (Period II) and Bahal (Period II). A deposit of about 5 metres with the Black-and-Red Ware below the first occurrence of the Northern Black Polished Ware has been reported from Prakash.

5. NEVASA[2]

In all, there are six cultural Periods at Nevasa in District Ahmednagar of Maharashtra. The first two belong to the Stone Age.

Period III, which was Chalcolithic, yielded a single sherd of the Black-and-Red Ware. It is a globular vessel with out-turned rim. The excavator has remarked, "The Black-and-Red Ware is represented by a single sherd and hence it is not possible to draw any conclusion regarding the large scale association of this Ware with other wares of the Chalcolithic Period at Nevasa. It may, however, be pointed out that the shape of the pot indicated by the sherd is not so far found in the Black-and-Red Ware of the historic layers".[3] Other ceramics of the Period were painted black-on-red, burnished grey, coarse grey, coarse red and red-painted grey wares. Amongst

1. Indian Archaeology—A Review, 1959-60, p. 34 and H.D. Sankalia and others, Report on the Excavations at Nasik and Jorwe, 1950-51, Deccan College, Poona, 1960.
2. H.D. Sankalia and others, From History to Prehistory at Nevasa (1954-56), Deccan College, Poona, 1960.
3. *Ibid.*, p. 211.

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the antiquities, mention may be made of microliths; polished stone axes; beads of copper, terracotta and semi-precious stones; copper and terracotta objects.

Period IV was characterized by the emergence of iron and the Northern Black Polished Ware. The Black-and-Red Ware was represented in full form by the rimless bowls and dishes, generally carinated at the shoulder. The types are similar to those found in the Northern Black Polished Ware. Coarse red, red slipped, tan-slipped, criss-cross painted Andhra and red and black wares were amongst the other ceramic industries. The most important find of the Period was a punch-marked coin. Copper and iron objects and beads of semi-precious stones constituted some of the other finds.

The Black-and-Red Ware continued in Period V, though without any difference.

Period III has been dated on the basis of C14 examination between 1500 B.C. and 1000 B.C. The beginning of Period IV has been placed in 2nd Century B.C. Period V has been assigned to a period from 1st to the 3rd century A.D.

6. INAMGAON[1]

The Deccan College Post-graduate and Research Institute, Pune, undertook horizontal excavation at the Chalcolithic site of Inamgaon in District Pune of Maharashtra with the primary objective of ascertaining house-plans of the entire settlement. The excavation revealed two cultural Periods with a sub-division in the later Period. Period I was represented by Central Indian Chalcolithic (Malwa) Culture and Period II by Northern Deccan Chalcolithic (Jorwe) Culture.

In Period I many of the characteristic shapes of the Malwa Ware were recorded, but the stumpy goblet or the chalice were absent. A new type was the vessel with a tubular spout. In addition, coarse grey and red wares and a small quantity of black burnished ware were also found. Handled bowl was a distinctive type in black burnished ware.

1. Indian Archaeology—A Review, 1968-69, 1969-70, 1970-71, pp. 18 and 25.

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The succeeding sub-Period IIA was characterized by the Jorwe Ware, with its well known types like the concave-sided bowls and the spouted *lotas*. In the later sub-Period IIB the fabric became coarse with a dull red surface colour. The carinated bowl was replaced by the convex sided bowl. Carinated bowls with out-curved beaded rim, however, continued in a meagre quantity. Coarse red and grey wares were found in association. Huge hand-made storage jars with incised and applique patterns and several fragments of a sandy ware constituted to be some other ceramics. Of all, the most important was the introduction of the ceramic Black-and-Red Ware, of which at least one bowl was found in almost every house. In the subsequent years' excavation also, the associated pottery was observed to be of a coarse fabric, which was painted in black over a wash of orange or light red. The painted patterns were mostly geometrical including a *swastika*. One sherd was painted in an abstract human figure design. Convex-sided and the channel-spouted bowl were the noteworthy types. High-necked jar of the Jorwe Ware and the grey ware of the Southern Neolithic Culture were also found. With the Black-and-Red Ware in sub-Period IIB, cultural contacts with the Megalith-builders of the South have been postulated by the excavator.

There was hardly any difference in the antiquities of the two Periods. Blades, produced by the crested ridge technique were found in abundance. In addition, ground or polished stone axes, sling-balls and mace-heads of stone; fish-hooks, bangles, a pair of tongs, a poker and a small pan in copper; bone points and punches of antler; bangles of shell, ivory and copper; beads of ivory, semi-precious stones and one of gold; baked and unbaked clay human figurines; terracotta bull, boar, horse and reel-like ear-studs constituted the other important finds. A large number of unfinished beads nearby implied a factory site.

The inhabitants of Inamgaon depended on a mixed economy of farming and hunting. Charred grains of wheat, lentil, jowar and possibly rice were collected from the occupational deposits of sub-Period IIA. Two extended burials were exposed. Children were buried in urns. The burials were often encountered in the premises

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of the residential houses themselves. The Chalcolithic people at Inamgaon used pits, dug into the natural black soil, as their dwelling, though of course, they constructed houses as well. Pit-dwelling is indeed surprising in view of the indications of a mud-rubble fortification, and an embankment for storing the surplus flood waters of the river God. The houses were made of mud and wattle and daub. The floors were plastered with mud and cow-dung. They were prepared with a base of sand layer superimposed by black and yellow clay. The settlements were all of circular huts located very close to each other.

On the basis of C14 tests, the Chalcolithic occupation at the site may be dated between *c.* 1600 and 700 B.C.

7. THEUR[1]

The excavation at Theur in District Pune brought to light new distinctive features in the construction of stone circles, with diameters varying between 18 and 28 metres, which were used for residential purposes with the help of post-holes. The inhabitants of these stone circles used painted black-on-red, black, coarse grey, sturdy red and coarse red wares. The predominant ceramic industry was the Black-and-Red Ware which constituted forty percent of the total pottery. It was usually of thin fabric and well-fired and exhibited a shining surface. According to the excavator, it resembled the Black-and-Red Ware obtained from Rangpur Periods IIC and III. Some of the shapes were found to be identical with those of the Lustrous Red Ware and associated Black-and-Red Ware of Saurashtra. Particular mention may be made of the graffiti marks on the interior of the Black-and-Red Ware, which the excavator felt, have evolved from the Indus script.

The paintings on the black-on-red ware were simple linear designs.

The earliest occupation at Theur started around *c.* 1500 B.C. and continued upto *c.* 1200 B.C., if not slightly later, as suggested

1. Indian Archaeology—A Review, 1969-70, pp. 28-29.

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by the occurrence of the sherds of the Jorwe Ware in the last phase. The dates are not based on C14 tests, but on comparative study.

8. TEKKALKOTA[1]

The excavation at Tekkalkota in Siruguppa taluk of Bellary District of Karnataka revealed two cultural Periods.

Period I was represented by polished axes, blades on chert, chalcedony and rarely opal; gold objects; beads of steatite and semi-precious stones; bone tools; and a solitary copper axe. The ceramic industry consisted mainly of grey ware in varieties of pale grey, burnished grey with or without ochre painting, brown and buff wares. Fractional burials with or without burial appendage were the distinguishing characteristics.

Period II was distinguished by the appearance of Black-and-Red Ware and a dull red ware, with a few painted black-on-red fragments. One fragment of Black-and-Red Ware was also painted. Ochre painted ware was completely absent and pale grey ware occurred in an insignificant quantity. Amongst the antiquities, mention may be made of a few copper objects; microliths; ground axes; and beads, mainly of carnelian.

There was a change in burial practice also. In place of fractional burials, the burials were extended in Period II. They were well furnished with funerary appendages. Fractional burial in multiple pots was also practiced.

For residential purposes, the inhabitants levelled up the rocky surfaces by giving a bedding of chips of stone with a sort of mud-mortar. After levelling, a circular structure was raised. The walls were of mud with plaster on split bamboos as believed by the excavator from the remains of burnt daub with bamboo impressions. The circular plan was determined by the arrangement of the boulders.

Period II has been dated to seventeenth century B.C. on the basis of C14 analysis.

1. M.S. Nagaraja Rao, Stone Age Hill Dwellers of Tekkalkota, Poona, 1965.

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9. PIKLIHAL[1]

About twenty kilometres south of Lingsugur, the ancient mound at Piklihal is located in District Raichur of Karnataka State. The excavations conducted by Allchin at the site revealed seven Periods of occupation, which are as follows :

1. Lower Neolithic
2. Upper Neolithic
3. Intrusion
4. Iron Age
5. Early Historic
6. Early Medieval
7. Medieval

So far as the study of the Black-and-Red Ware is concerned, Periods II, IV and V only are to be taken into consideration. The sequence found at Piklihal is very much like that observed at Brahmagiri. A close overlap between the pottery types of the Megalithic Period at Brahmagiri and Piklihal Iron Age can be clearly noticed. Period III (intrusion) is of a very short duration during the course of which fresh elements arrived at the site and absorbed themselves into the local existing culture. The Black-and-Red Ware appears to have become popular at Piklihal in a much later context than Brahmagiri, though of course, a few painted sherds at the close of the Neolithic Period recall the evidence of Cists V and VI at Brahmagiri, and also thereby establish a link with Bahal (Tekwada) IB and Prakash. Elongated vessels, so characteristic of the earlier Megalithic vessels in Cists V and VI at Brahmagiri and also the burial at Tekwada are conspicuously absent. Bowls and dishes with straight or slightly incurved sides and rounded or almost flat base are amongst the important types in the Black-and-Red Ware at Piklihal. In every other respect, the sequence at Piklihal is the same as at Brahmagiri, but for an additional Medieval Period at the former.

1. F.R. Allchin, Piklihal Excavations, Hyderabad 1960.

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10. ANCIENT SITES IN BIJAPUR DISTRICT[1]

An exploration by A. Sundara in Krishna-Tungabhadra Valley in Karnataka brought to light a number of sites which yielded Black-and-Red Ware, occasionally painted. According to the account given by Sundara, the Black-and-Red Ware belonged to the Chalcolithic Period, because it was always found with the red ware of Jorwe fabric. A few sites lying on the bank of Bhima river also yielded Megalithic Black-and-Red Ware as reported by Sundara.

REGION F

This region has the privilege of being the area where the study of the Black-and-Red Ware was initiated. It covers almost the entire area of South India, which is full of Megalithic burials. The close assocation of the Black-and-Red Ware with the burials made certain archaeologists to call it by the name of funerary vessel. The most important site in the region is Brahmagiri in Chitradurga District of Karnataka. A much earlier beginning than the Megalithic burials has been alluded to by Wheeler in the report on the Excavation at Brahmagiri. The same has been confirmed at the ancient site of Kesarpalle.

1. KESARPALLE[2]

The ancient site of Kesarpalle in Gannavaram Taluka of District Krishna in Andhra Pradesh provided for the first time a continuous index of cultures that flourished in the lower Krishna basin from the Chalcolithic to the early historical period. The entire cultural deposit has been divided into four Periods.

Period I has been termed as Chalcolithic, though no stone implement nor even a bit of copper was found. It is characterized

1. A. Sundara, Proto-historic Sites in Bijapur District, Journal of the Karnatak University, Social Sciences, Vol. IV, April 1968, pp. 1-25.
2. Ancient India, No. 22, New Delhi.

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by grey or burnished grey ware and red and black wares, besides the Black-and-Red Ware. Two sherds of the Black-and-Red Ware were painted, one in fading white on black and the other black on black, both internally. One grey ware fragment was also painted in black. Red and grey wares were often decorated in incised or finger-tip designs. A few pottery-discs, two bone points and a conical terra-cotta object of indeterminate use and a terracotta spacer bead were the restricted associated antiquities. Two Neolithic celts found on the surface might have belonged to this Period.

During the last days of the Chalcolithic occupation a new set of people representing Period II with distinctive cultural traditions arrived at the site. The chief cultural traits of these people were iron and Megalithic Black-and-Red pottery. The pottery did not carry any painting. Black, coarse grey and red are the associated wares. Iron objects including a spear-head and a wedge, beads of copper, glass, jasper and terracotta; a bone spacer bead; and stone dabber were the important antiquities. A sherd of Northern Black Polished Ware occurred in the upper levels.

Period III is distinguished by the occurrence of Rouletted Ware, which, however, was absent in sub-Period IIIB. The ceramics of the Period were represented by Black-and-Red, red and red slipped wares. Red ware was occasionally decorated. Amongst the restricted antiquities, mention may be made of iron nails with bent head; a few shell objects; and a cylinder-square bead of lapis lazuli.

Black-and-Red Ware was absent in Period IV.

The dates assigned to different Periods on the basis of a comparative study by the excavator are as follows :

Period I : middle of the eighth to the middle of the fifth century B.C.

Period II : middle of the fifth century B.C. to the middle of the first century A.D.

Period III : middle of the first century A.D. to the middle of the fourth century A.D.

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2. BRAHMAGIRI[1]

The cultural remains at Brahmagiri in District Chitradurg of Karnataka was divided into three overlapping Periods. Period I was Neolithic-Chalcolithic, characterized by polished stone pointed butt-axes, crude microliths, two copper rods, a chisel and a coarse grey hand-made pottery.

An intrusive iron using Megalithic Culture represented Period II. Polished stone axes and microliths occasionally occurred at the town-site in the lower levels of this Period, but they were not in general use. This can be accounted for by survival or overlap. The chief ceramic industry of the Period was Black-and-Red Ware of a distinct variety, both in shape and fabric. The shapes are usually plain and utilitarian in character with bowls, dishes, vases and lids as the prominent types.

Dull red and black-polished wares are the other ceramics of Period II. Iron played a dominant role in the cultural equipments of the Period. Implements like tanged arrow-heads, knives, daggers, wedge-like blades, sickles, lances, sword, barbed arrow-heads and spears made out of iron were in general use. Copper continued to be in use and a large number of bangles were manufactured out of it. Among other antiquities, mention may be made of tiny white beads of magnesite or dolomite; beads of terracotta, jasper, shell, gold and steatite; conical button of steatite with V-shaped decoration; and terracotta discs.

The Black-and-Red Ware continued for sometime in an inconspicuous manner in Period III, which was named after Andhra dynasty. This can be accounted for only by survival of the industry for sometime.

The picture of the Black-and-Red Ware at Brahmagiri will remain incomplete unless and until the types found in Cists V and VI are also dealt with. In Cist V the vessels of the Black-and-Red

1. R.E.M. Wheeler, Ancient India No. 4, Bulletin of the Archaeological Survey of India, New Delhi.

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Ware were found on a floor, which was superimposed by the surface soil existing at the time of the construction of the burial, whereas in Cist VI they were collected from a pit partially floored with slabs, beside and prior to the burial in a layer precisely equivalent to that mentioned above.

Wheeler has fixed the chronology of different Periods at Brahmagiri in a very dramatic manner. Taking the Andhra dynasty, Satavahana and Roman coins and Rouletted Ware as the basic evidences, he has dated the end of the Megalithic Culture (Period II) to the middle of the first century A.D. A period of two centuries has been assigned to the occupational deposit of the Period ranging from three to four feet. The specific duration of two centuries has been taken for granted by Wheeler, simply to adjust his theory of synchronising the spread of Megalithic Culture with the dislocation of the Mauryan Empire following the death of Asoka in 236 B.C. Hence, Wheeler has ascribed a provisional date of *c.* 200 B.C. to A.D. 50 to Period II. The preceding and the succeeding Periods have been dated between the earlier half of the 1st millenium and 200 B.C. and A.D. 50 to 300 respectively.

A much earlier date for the beginning of the Black-and-Red Ware, on the basis of evidences from Cists V and VI as well as by a comparative study with the remains at other sites, can be easily postulated. Wheeler has himself admitted the fact in the report. He has clearly stated "Three pots (fig. 17, 1-3) occurred together in an accumulation which overlay a floor partially covered with stone slabs and underlay the surface soil existing at the time of the construction of Cist V. They are presumably, therefore, of appreciably earlier date".[1] He repeats the same fact regarding Cist VI and says, "Eleven pots (fig. 17, 4-13) were found in a pit partially floored with slabs beside and prior to Cist VI in a layer precisely equivalent to that containing Group A."[2]

1. Ancient India, No. 4, p. 221.
2. *Ibid.*

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3. MASKI[1]

Maski is a very important Megalithic site in District Raichur of Karnataka State. Of the four cultural Periods distinguished at Maski, the earliest was Chalcolithic, which did not yield Black-and-Red Ware. Period II was characterized by the introduction of iron and the emergence of the Megalithic people on the scene. The pottery used by them belongs to the well-defined class of the Megalithic Black and Red Ware, the distinguishing features of which are burnished and polished surface. Both in fabric as well as in finish, the Black-and-Red Ware found at Maski bears an unmistakable similarity with those unearthed at other Megalithic sites in South India. The closest analogy is provided by the remains excavated at Brahmagiri. Though there may not be a complete identity between the shapes represented at both the sites, the variation as a whole is insignificant. As at Brahmagiri, the elongated vessels are a characteristic of the Black-and-Red Ware types at Maski as well. The other associated ceramic industries at Maski are all-black and the red-slipped wares. Beads of quartz, carnelian, chalcedony, agate, jasper, lapiz lazuli, garnet, coral, shell, glass, paste, gold, horn, and terracotta; iron lance, axe, knife-blade, tanged arrow-head, chisel, ferule, a dagger and sickle-blade; shell and glass bangles; terracotta gamesman; stone balls and pestles; and a copper bangle constituted the important antiquities. Microliths survived in a negligible percentage. The Black-and-Red Ware continued in Period III, but the technique is entirely different and the black portion on the exterior is confined to the base instead of the upper part of the vessel and as such does not come under the purview of the present study. Period IV was medieval. The dates ascribed by the author to the different periods are as follows :

Period I — Early first millenium B.C. to 400 B.C.

Period II — *c.* 200 B.C. to the middle of the first century A.D. with a reasonable margin of a century on the earlier side.

1. B.K. Thapar, Ancient India, No. 13, Bulletin of the Archaeological Survey of India, New Delhi 1957.

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Period III — Middle of the first century A.D. to *c.* 3rd century A.D.

Period IV — *c.* A.D. 1000-1600.

The date of Period II can be pushed back further on the basis of the evidence from Brahmagiri.

4. HALLUR[1]

The excavation at Hallur, a border village in the Hirekerur Taluka of Dharwar District of Karnataka State, was undertaken to reveal the nature of Neolithic Culture observed in the mounds located on river banks as against that excavated from the hilly terrain in Districts Chitradurga, Bellary and Raichur. The ancient site of Hallur is located on the left bank of river Tungabhadra. Of the other two main objectives in view for undertaking the excavation, the first was to ascertain the stratigraphic position of the painted Black-and-Red Ware, because the fabric and shapes of the ceramic recalled those of the Iron Age Megalithic burials, whereas the tradition of painting in white was known only from Chalcolithic sites. The second objective was to determine the chronology of the Iron Age people.

During the course of excavation, two main Periods were distinguished on the basis of pottery and associated cultural assemblage. There were two sub-Periods in Period I. The Black-and-Red Ware occurred only in Period II.

Sub-Period IA was characterised by pale grey and burnished wares, often painted in red ochre, a coarse blackish grey and a meagre quantity of reddish brown ware with pre-firing painting in purple colour. The sub-Period has been designated as Early Neolithic on account of the occurrence of a few crude polished stone tools manufactured from the locally available schist slabs. The edges of the tools were ground. The typical Neolithic stone blades were completely absent. Stone quern, discoidal hammer and shell beads in very

1. M.S. Nagaraja Rao, Protohistoric Cultures of the Tungabhadra Valley—A Report on Hallur Excavations, Bangalore 1971.

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restricted number were the other antiquities. No metal object was found.

Sub-Period IB was marked by the change in ceramics, occurrence of specialised type of copper implements, a popular blade industry and increase in the yield of antiquities as a whole. The black-burnished ware of sub-Period IA continued to be in use. The other ceramic industries were brown-and-black ware, coarse dull red ware and painted black-on-red ware in a very limited quantity. The earlier three ceramics were occasionally painted in ochre colour. Pale grey ware of sub-Period IA disappeared completely.

The number of Neolithic tools increased in number substantially. Dolerite and trap took the place of schist in the manufacturing of tools. The characteristic blade industry with parallel-sided blades, lunates etc., came to be popular. Copper also made its appearance with double-edged axes and fish-hooks as the main tools. Bone tools; shell and steatite beads; rubber stones; and stone discs constituted to be the other antiquities.

The houses were probably constructed of wooden posts and bamboo screens, the pattern being circular huts. The floors were made of schist stone chips.

Period II was distinguished by the advent of iron. But for the blade industry, all other features of sub-Period IB continued. Typical Black-and-Red Ware also made its appearance in this Period. The other ceramics were black and red-slipped wares. Painted variety of the Black-and-Red Ware and black ware also occurred. Iron implements comprised arrow-heads, spear-heads and knife blades. Stone hammers; beads of bone, carnelian, terracotta, green stone, antler and gold were the other associated antiquities. On the western fringe of the site Megalithic burials were observed.

The top deposits of Period II were very much disturbed. They yielded russet-coated painted ware, red-slipped ware, black ware and black-and-red ware of the early historical period.

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On the basis of C14 analysis the following dates were assigned to the two cultural Periods :

Sub-Period IA	—	*c.* 1800 to 1500 B.C.
Sub-Period IB	—	*c.* 1500 to 1100 B.C.
Period II	—	*c.* 1100 to 800 B.C.

5. JAUGADA[1]

The ancient site of Jaugada is situated in the Ganjam District of Orissa. The excavations have brought to light two Periods of occupation.

A Neolithic Culture has been vaguely represented by few stone celts of oblong section, though all of them are surface finds. One of the celts was, however, encountered in a level immediately above the natural soil and seemingly associated with the Black-and-Red Ware.

Period I was distinguished by a full-fledged iron-using culture. It is not clear from the brief report published in Indian Archaeology—A Review, whether there was any line of demarcation between the Neolithic complex and the iron-using people. The Black-and-Red Ware of Period I is mostly of fine and well burnt fabric, often with a polished surface. Dishes and bowls are the common shapes. The other ceramics comprise dull-red ware of medium to coarse fabric and the Red Polished Ware. Beads, remarkable for their workmanship, and made of shell, bone, carnelian, agate, quartz etc., constitute the only important finds.

Period II was marked by a punch-marked and Puri-Kushan coins. A knobbed vessel, which made its appearance in Period I, continued to exist in a degenerate form. Red ware manufactured of medium grained clay and mostly underfired was the only other ceramic of the Period. It was often ornamented by incised and applied patterns. Implements of copper and iron were manufactured both for the purposes of war and peace. The workmanship of the beads made of semi-precious stones, shell and terracotta was not of the same high standard as in Period I.

1. Indian Archaeology—A Review, 1956-57, p. 30.

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The chronological limits of the occupation cannot be precisely determined. If the Neoliths are not taken into consideration, a pre-Christian origin can be assigned to the beginnings of Period I, on the basis of pottery. The upper limit can be safely fixed with the help of Puri-Kushan coins.

6. SISUPALGARH[1]

The ancient site of Sisupalgarh is located about three kilometres east-south-east of Bhubaneswar, the capital of Orissa. The edicts of Emperor Asoka are also found on a low granite boulder in the Dhauli Hills, which are about five kilometers south-south-east of the ancient site.

The occupation at Sisupalgarh was divided in three Periods in all with a sub-division in Period II viz., IIA and IIB.

Period I

It has been called the Early Period representing the formative stage of Sisupalgarh ancient culture, which developed and matured in the succeeding sub-Period IIA. The pottery of this Period was plain, devoid of any ornamentation. It was wheel turned, ranging in colour from dull grey to terracotta red. The associated finds were restricted, probably because of the limited area of digging.

Period IIA (Early Middle Period)

The ancient culture of Sisupalgarh was at its height of prosperity in this sub-Period. Sophisticated pottery was produced. Well fired and nicely finished bright red-polished ware had an upper hand. Incised and applied decorative patterns were also in use.

The Black-and-Red Ware of Megalithic fabric made its appearance for the first time at the beginning of this sub-Period. Further up in the same Period, earliest specimens of Rouletted Ware occurred.

1. B.B. Lal, Ancient India, No. 5, Bulletin of the Archaeological Survey of India, New Delhi, 1949.

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Amongst the associated antiquities, mention may be made of terracotta ear ornaments; iron implements of peace and war; and beads of agate, carnelian, quartz etc.

Structures were constructed of large chiselled laterite blocks, though brickbats indicated the use of bricks as well. A ring-well was encountered in the late levels. The defence wall was initially constructed in this sub-Period.

Period IIB (Late Middle Period)

The ancient culture of Sisupalgarh faced a stage of decline in this sub-Period. The quality of the red-polished ware got poorer and in some cases ochre-wash was used instead of slip. The decorative patterns also deteriorated. In the late levels of this sub-Period, three fragments of Northern Black Polished Ware were found. The Black-and-Red Ware continued.

The associated finds included terracotta ear-ornaments; iron implements and beads; glass bangles and terracotta bullae with human heads and animal figures. The heads appear to have been imitated from Roman coins.

The Black-and-Red Ware does not occur in Period III and as such need not be dealt.

On the basis of comparative study, the dates assigned to various Periods are as follows :

I (Early Period) : *c.* 300-200 B.C.

IIA (Early Middle Period) : *c.* 200 B-C.-A.D. 100

IIB (Late Middle Period) : *c.* A.D. 100-200

III (Late Period) : *c.* A.D. 200-350

7. PORKALAM[1]

Porkalam in District Trichur of Kerala State is a single culture site representing the Megalithic remains, the principal ceramic

1. B.K. Thapar, Ancient India, No. 8, pp. 3-16.

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industry of which was the Black-and-Red Ware. The main types of the Black-and-Red Ware comprise shallow and deep bowls. Black-slipped ware and four legged vases, an ordinary vase and the pyriform urn with its lid in red-slipped ware are the associated ceramic industries.

Etched carnelian beads; tanged knife or dagger, blade (?) and pike of iron are some of the important antiquities.

On the basis of a comparative study with the remains at Brahmagiri and the occurrence of Megaliths and iron, the site has been dated between 200 B.C. and the middle of 1st cent. A.D.

8. ADICHANALLUR[1]

The southernmost Megalithic site of Adichanallur in District Tirunveli of Tamil Nadu has unfortunately not been subjected to scientific digging. The only conclusion which can be derived from the pottery and the antiquities discovered at the site is that the remains belong to the Megalithic complex. The published report of the excavation is sketchy and lacks greatly in the details of the fabric of different wares, besides their phases. In the absence of these details, a comparative study is rather impossible. It is not possible to determine the exact fabric and shape of the pots from the confused assemblage of the pottery types in the published plates. As a whole, it can be said that the shapes bear a close resemblance to those found at other Megalithic sites. The associated finds confirm this relationship.

1. Alexandar Rea, Adichchanallur Excavations, Annual Report of the Archaeological Survey of Madras and Coorg, 1902-03, pp. 11-14.

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V

Comparative Study of Shapes

Before taking up the question of the origin of the Black-and-Red Ware and its comparative study, it is essential to define the term 'Culture'. Culture is that complex whole which includes knowledge, belief, act, morals, law, customs and any other capabilities and habits acquired by man as a member of society. Defining culture indirectly K.M. Munshi said, "In other words a distinctive culture comes into existence when a people develop a continuous way of life. Such continuity expresses itself in various ways, in common traditions and norms of conduct, in common institution, in a common memory of triumphs achieved, in a common aesthetic outlook, in a capacity for characteristic collective action.

"If there are no common traditions, no common culture can come into existence".[1] Gordon Childe in a very simple statement said, "The totality of recognised types current simultaneously in a given area is termed a 'culture' "[2]. Lucas also laid emphasis on the totality of the traits and said, "Culture is a common way in which men live, think and act. It comprises : (1) a general adjustment to economic needs or to geographic surroundings, (2) a common organisation produced to satisfy social and political needs arising in these surroundings, and (3) a common body of thought and achievement. This includes art, literature, science, inventions, philosophy, and religion"[3]. The simple definitions make it amply clear that a particular ceramic industry

1. K.M. Munshi, Foundations of Indian Culture, Bhartiya Vidya Bhawan, Bombay 1965, p. 4.
2. Gordon Childe, What Happencd in History, London 1942, p. 11.
3. Henry S. Lucas, A Short History of Civilization, London 1953.

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cannot by itself constitute a culture. Any culture is a composite combination of several traits. A particular ceramic industry may happen to be the chief characteristic in certain cases, but so long it is not accompanied by other basic cultural traits, we are not justified to call it a culture. Of course, the culture may be labelled after the chief characteristic, but it will represent not only the ceramic after which it is named but all the essential traits taken together. On the same analogy the antiquities of two sites can be said to belong to one and the same culture only when the majority of the cultural traits, if not all, are similar. There can be local modifications, no doubt, depending upon the resources of the region, but the parent traits like art and customs must be one and the same. If the Black-and-Red Ware is considered to represent a culture by itself, as certain archaeologists are inclined to believe, we will simply make a mess of different cultures unearthed in different parts of the country, both in space and time. On the one hand, it is observed that the Black-and-Red Ware is used by the Harappans who are well known for their advanced state of civilization and on the other, it is one of the ceramics of the Neolithic-Chalcolithic people representing a very poor economy and standard of living.

It must be emphasised at the outset that the shapes represented in different regions, rather sites, are not identical. The same is the case of the fabric, which differs from place to place. An interesting feature which has been noted during the course of comparative study is that the Black-and-Red Ware types are generally an imitation of those occurring in other ceramic industries at all the sites but for the places where it has the privilege of being the chief characteristic. Rao has remarked appropriately and said, "Though the technique of inverted firing is the same at all the sites where the Black-and-Red Ware vessels occur, the shapes of vessels vary from site to site, but they closely follow the shapes in other wares of a given site"[1] (Fig. 1). Sankalia also held the same view for the Black-and-Red Ware from Navdatoli and said, "A detailed description of the shapes also points

1. Ancient India, Nos. 18 and 19, p. 170

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to this conclusion. The various bowl-shapes or types in the Black-and-Red Ware with paintings in white largely copy or imitate the forms in Malwa Ware"[1]. A detailed study has led to the conclusion that the Black-and-Red Ware found in different parts of the country has very little in common, the only similarity being the technique of manufacturing. There was no diffusion of culture, as is generally believed by certain archaeologists.

REGION A

1. LOTHAL

The Black-and-Red Ware occurred in both the Phases at Lothal. Convex-sided bowl happened to be the dominant, truly speaking, the only type in Phase A. Its use alongwith a similar shape in micaceous red ware was popular enough amongst the earliest inhabitants at the site. Not once, but a number of times it has been observed that the Black-and-Red Ware had no individuality of its own, so far as the shape is concerned. The convex-sided bowl in the micaceous red ware was produced in a far larger number than the Black-and-Red Ware and as such it can be said, without the least hesitation, that but for a different technique, the latter was simply an imitation of the principal ceramic industry. It is further supported by the restricted quantity of the Black-and-Red Ware.

In Phase B, a number of new types, restricted to bowls, were introduced in the Ware though not independently. Similar shapes in a larger quantity were manufactured in other much more important fabrics. A majority of the new types are having an everted rim and tapering sides. In a limited number of cases the sides are either straight or slightly incurved. Bowls with a flaring rim and concave sides are most attractive. Development of a blunt carination at the shoulder is a marked feature of Phase B at Lothal.

The painting on Black-and-Red Ware at Lothal was always found to have been executed on the interior surface in dirty white

1. H.D. Sankalia and others, Chalcolithic Navdatoli, Poona 1971, p. 43.

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groups of vertical strokes. As a natural corollary to the other ceramic industries at the site, the fabric of the Black-and-Red Ware is also of a very high standard. It has been made of well levigated clay and burnished, resulting in a very smooth surface. In keeping with the delicacies of the Harappans, the black on the upper part of the exterior of the bowls makes a straight line.

The following are the main types : (Figs. 2 to 4)

1. Basin with a splayed-out rim and straight sides.
2. Deep bowl with an obliquely-cut inturned rim.
3. Bowl with inturned sharpened rim.
4. Bowl with a thickened rim pointed internally.
5. Small bowl with a flaring sharpened rim and blunt-carinated shoulder, painted internally in vertical irregular strokes.
6. Bowl with a sharpened rim, cardoned neck and rounded-base.
7. Convex-sided bowl with almost straight-edged rim and blunt-carinated shoulder.
8. Bowl with a straight-edged sharpened rim.
9. Bowl with a sharpened splayed-out rim.
10. Bowl with a sharpened splayed-out rim and smooth convex body.
11. Bowl with a flaring rim and blunt-carinated shoulder.
12. Bowl with an everted sharpened rim and carinated shoulder.
13. Bowl with a splayed-out rim.
14. Small bowl with an out-turned rim and convex body.
15. Deep bowl with smooth convex sides and pointed rim.
16. Bowl with a stud handle.

2. RANGPUR (Plate I)

Period II A (Fig. 5, no. 1)

Like Lothal, the Black-and-Red Ware is encountered at Rangpur in all the levels but for the lowest Period I, which represented

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the Stone Age. Period II has been sub-divided into three, viz., A, B and C. The only type of Black-and-Red Ware available in sub-Period IIA is a bowl with featureless rim and convex profile. It is painted internally in dirty white vertical bands. Unlike the Central Indian Chalcolithic Black-and-Red Ware, where the upper part of the exterior is also black, the exterior is completely red at Rangpur.

Period II B (Fig. 5, no. 2 and 3)

There are two types in sub-Period IIB. One is a bowl with a ring-footed base and bulbous body and the other a bowl with a slightly everted and flaring rim. The former is well burnished, whereas the exterior surface of the latter is rough. Painting has been executed in white wavy lines on the interior of the latter. The exterior surface is completely red.

Period II C

In sub-Period IIC, Black-and-Red Ware continued to be in limited use. Jar and dish are new types of this sub-Period. The three types represented are as follows : (Fig. 6, nos. 4 to 6)

4. Jar with a beaked rim and bulbous body.
5. Bowl with an everted rim and carinated shoulder.
6. Dish with a raised flat rim and flanged shoulder.

Period III

A refined and subtle variety of Black-and-Red Ware was produced in Period III. The overall treatment of the vessels was of a high quality with a much thinner section. During the earlier sub-Periods the use of the Ware was restricted, but in Period III it gained popularity. Embellishing the pots with painted designs also became a common feature and not a rarity like the preceding occupational deposits. A fundamental variation observed in this Period was that a specific upper part of the exterior was also black when in the lower levels it was entirely red. Bowl, though of a different shape, continued to be in general use. A carination in the bowls, which were much deeper, was a distinguishing feature. The Black-and-Red Ware, however, had no individuality of its own. The shapes were

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nothing more than an imitation of the chief ceramic industry, the Lustrous Red Ware. Nevertheless, the painted designs were very much limited and simpler as compared to those in the dominant industry. They comprised mainly vertical lines, dots and strokes in groups, always executed on the interior surface. Various types in the Black-and-Red Ware occuring in Period III are described below. (Fig. 6, nos. 7 to 13 and fig. 7)

7. Convex-sided bowl, painted internally in four wavy vertical lines at the shoulder.
8. Bowl with a sharpened rim, painted internally in groups of vertical lines.
9. Bowl with a flattened rim and convex sides.
10. Small bowl with splayed-out rim and smooth convex body, painted internally in groups of vertical strokes.
11. Bowl with a flaring rim, painted internally in groups of vertical and oblique strokes.
12. Bowl with sharpened rim, painted internally in light black vertical wavy lines at the shoulder.
13. Small bowl with a sharpened everted rim and smooth convex sides.
14. Bowl with a concave long neck and carinated shoulder.
15. Deep bowl with concave sides and sharp-carinated shoulder.
16. Bowl with a beaded rim and blunt-carinated shoulder.
17. Bowl with an everted rim, almost straight neck and carinated shoulder.
18. Bowl with an internally sharpened rim, painted internally in vertical and oblique strokes.
19. Bowl with a slightly everted rim and blunt-carinated shoulder.
20. Small bowl with a sharpened everted rim, painted internally in vertical strokes at the rim.
21. Bowl with a thickened rim and carinated shoulder.
22. Deep bowl with an everted rim and sharp-carinated shoulder.

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3. ROJDI

The use of Black-and-Red Ware in Phase B of Period I at Rojdi was negligible, as is evident from only two fragments yielded by the excavations. Of the two, the shape can be determined in one case only. It is a bowl with a beaked rim and convex body. The other is a simple fragment, though of course, painted internally in white concentric circles (Fig. 8, no. 1).

4. AMRA AND LAKHABAWAL

The only type available in Black-and-Red Ware at Amra and Lakhabawal is a bowl.

5. PRABHAS PATAN

The horizon of the availability of Black-and-Red Ware in a protohistoric context is not clear enough on account of the confusing reports on the finds from the site published from time to time. In situations so undependable, it is better to keep away from any confusion and not to go into any detail of the ceramic.

6. SOMNATH

Adequate information on the shape and fabric of Black-and-Red Ware at Somnath is not available.

7. DESALPUR

As usual, dishes and bowls with or without flat base are the only two shapes available in sub-Period IB at Desalpur. They are painted internally on the rim in a greyish pigment, the patterns being oblique slashes.

8. SURKOTADA

Black-and-Red Ware makes its appearance in sub-Period IC. Bowl with an everted rim and convex sides is the dominant shape. Some of the bowls are having carination at the shoulder. Basins with short-thickened rims and a few stud-handled bowls have also been reported from the site. Painting, in quite a large number of designs, was executed on the interior of the pots. The designs

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comprised vertical strokes and lines in groups, vertical wavy lines, concentric circles, arcs joined to horizontal band and intersecting criss cross lines. The following are the main types : (Fig. 8, nos. 2 to 7 and fig. 9)

2. Deep bowl with a sharpened everted rim and smooth convex body, painted internally in vertical wavy lines over a horizontal line.
3. Bowl with a splayed-out rim and blunt-carinated shoulder, painted internally in vertical wavy lines.
4. Bowl with a beaded rim and blunt-carinated shoulder, painted internally in vertical lines.
5. Bowl with a splayed-out rim, painted internally in groups of vertical strokes.
6. Bowl with a flaring rim and blunt-carinated shoulder, painted internally in vertical and oblique strokes.
7. Bowl with a flaring rim and convex body, painted internally in vertical strokes.
8. Bowl with an everted rim and convex body, painted internally in groups of vertical strokes.
9. Bowl with a splayed-out rim and flanged shoulder, painted internally in vertical and oblique strokes.
10. Bowl with a sharpened flaring rim, painted internally in vertical lines and a herring bone pattern.
11. Bowl with a splayed-out rim and convex body, painted internally in vertical strokes and lines.
12. Small bowl with a splayed-out rim and carinated shoulder, painted internally in groups of vertical lines.
13. Deep bowl with featureless rim and sides tapering towards the bottom, painted internally in circular lines.
14. Small bowl with an everted sharpened rim and blunt-carinated shoulder, painted internally in groups of vertical strokes and lines.
15. Bowl with a splayed-out rim, painted internally in vertical strokes.

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16. Bowl with a flaring rim and blunt-carinated shoulder, painted internally in groups of vertical strokes.
17. Bowl with a sharpened splayed-out rim and convex body, painted internally in groups of vertical lines.
18. Bowl with a thickened flaring rim and convex body, painted internally in vertical and oblique strokes.
19. Bowl with a flaring rim and convex body, painted internally in groups of vertical lines.

9. KANASUTARIA

The shapes in the Black-and-Red Ware at Kanasutaria are similar to those found in Periods IIC and III and Rangpur, the main types being bowl with a sharp- or blunt-carination, stemmed bowl and shallow dish with a beaded rim.

10. ALAU

An exclusive reference to the main types of Black-and-Red Ware has not been made in the sketchy report. They, however, appear to be blunt-and sharp-carinated bowls which are so popular in Periods IIC and III at Rangpur.

11. MOTA MACHIALA

The types in the meagre quantity of Black-and-Red Ware occurring at Mota Machiala are similar to those found in Periods IIC and III at Rangpur.

12. SUJNIPUR

A bowl similar to that encountered in Period III at Rangpur is the only type at Sujnipur.

13. BHAGATRAV

No reference to the types of Black-and-Red Ware is available, so far as Bhagatrav is concerned.

14. HASANPUR

Carinated bowl is the only shape to which a reference has been made in the brief report.

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15. NAGAL

The following shapes in the Black-and-Red Ware are available from the ancient site of Nagal :

(1) Dish; (2) Deep bowls; (3) *Lota*-shaped vessels; (4) Wide basins with recurved rims; and (5) Carinated dishes.

16. MALVAN

Convex-sided bowl, dish and jar are the only types available in the scanty collection of Black-and-Red Ware at Malvan.

17. JOKHA

The Black-and-Red Ware is represented in the shape of bowls at Jokha. They are having convex sides and pen-knife edged rim, carinated shoulder and featureless everted rim.

REGION B

1. AHAR (Plate II and fig. 10)

Amongst all ancient sites excavated in India, Ahar is the richest for the study of Black-and-Red Ware. No other site has so far yielded such a large quantity and variety of the ceramic. It is also unparalleled in the thickness of the cultural debris representing the typical pottery.

Period I has been sub-divided into three sub-Periods viz., IA, IB and IC. The sub-division is based primarily on the variation observed in the Black-and-Red Ware.

Sub-Period IA

According to the excavator there are six varieties of Black-and-Red Ware in this sub-Period. They are as follows :

1. Plain Black-and-Red with one or both surfaces burnished.
2. Similar to 1 but with paintings in dull white either on the exterior or interior surface or both.
3. Black-and-Red with matt surface.
4. Black-and-Red with some portions having a pre-firing brick-red slip, mostly on the black portions.

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5. The entirely black burnished pottery; the ware is grouped under Black-and-Red because in several cases the bottom portions are absent, otherwise it would be the same as category 1.
6. Black-and-Red with gritty core and surface.

Paintings

The paintings on the black surface have been executed in pre-firing stage. The designs are generally very simple, restricted to lines and dots. Wavy lines and spirals are also observed, but they are an exception.

Shapes (Figs. 11 to 22, nos. 1 to 163)

Bowls are the predominant type in the Black-and-Red Ware. Bowl-on-stand, shallow pan, pots with globular body, and pots with elongated globular body are some of the other shapes. A limited number of these shapes are repeated in the Red Ware.

(A) The following are the main types in the Black-and-Red Ware :

1. Bowl with in-tilted edge.
2. Bowl with in-tilted and flaring rim.
3. Bowl with the rim projected inside developing a carination.
4. Bowl with an everted rim and convex sides, painted internally in vertical wavy lines.
5. Bowl having a sharpened splayed-out rim with almost straight sides, painted externally in group of vertical lines between multiple loops.
6. Bowl with a splayed-out rim and convex sides, painted internally in circular lines placed vertically and oblique strokes.
7. Bowl with a sharpened everted rim and convex sides.
8. Deep bowl with a sharpened everted rim and slightly bulging sides, painted externally in intersecting group of slanting lines.
9. Deep Bowl with a flaring rim and convex sides.

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10. Deep bowl with everted rim and convex body, painted externally in group of oblique strokes meeting diagonally.
11. Deep rimless bowl with sides tapering down, painted internally in vertical lines and externally in group of slanting lines meeting each other.
12. Deep bowl with a sharpened flaring rim, ribbed shoulder and convex sides, painted externally in spirals emanating from a horizontal band and externally in dots.
13. A variant of 12, painted internally in group of arcs emanating from an oblique band and externally in wavy lines.
14. Deep bowl with a flaring rim, ribbed shoulder and convex body, painted internally in vertical lines and dots and externally in spiral and ladder-like pattern.
15. Deep bowl with a flaring rim, two ridges on the shoulder and convex body, painted externally in ripple-like pattern.
16. Bowl with a sharpened everted rim and convex sides.
17. Deep bowl with a thickened everted rim and almost straight sides.
18. Shallow bowl with a featureless rim and convex sides.
19. Sub-spherical bowl, painted externally in dots and slanting lines.
20. Vessel with a circular flaring rim and elongated body.
21. A variant of 20 with a constricted neck, painted externally in group of vertical lines.
22. A variant of 21, painted externally in group of horizontal lines.
23. Vessel with a flaring rim and elongated body.
24. Vessel with a small flaring rim and elongated body. The sides are getting thicker towards the bottom. It is painted in slanting strokes joined to a vertical line.
25. Bowl with flared sides on a stand with hollow stem and flared base. The bowl is painted internally in vertical and oblique strokes.
26. A variant of 25, painted internally in groups of slanting lines and strokes.

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27. Bowl with an oblique-cut rim and sides getting thinner towards base.
28. Small bowl with beaked-out flared rim and slight convexity at the shoulder, painted internally in short vertical lines.

(B) *Brown-slipped Black-and-Red* (types 1, 3, 4 and 5 repeated).

29. Vessel with a globular body and out-turned rounded rim.
30. A variant of 29 with a flared mouth.
31. Vessel with a short flared rim, constricted neck and thick sides.

(C) *Unburnished Black-and-Red*

32. Bowl with a very small beaded rim and convex sides.
33. Small pot with convex sides and out-turned rim.
34. Vessel, probably with globular sides and bluntly beaked out-turned rim.

Painted designs

In addition to the designs already mentioned above with the shapes, the following are the other patterns :

35. Spirals in a row with a series of dots below.
36. Spirals alternated with dotted elongated biconvexes.
37. Double wavy lines.
38. Ladders making chevron-like pattern.
39. Groups of lines, circles and dots.
40. Vertical lines and hatched diamonds.
41. Vertical lines and dots.
42. Hatched diamonds.
43. Spirals, arranged triangularly.
44. Rows of empty linear diamonds between horizontal lines with a row of dots below.
45. Simple linear diamonds.
46. Horizontal double zig-zag of dots.
47. Short incomplete loops.
48. Groups of short and elaborate loops alternated.

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49. Groups of lines slanting to right and left with bands on either side.
50. Horizontal zig-zags, hatched and alternated circles.
51. Herring bone pattern.
52. Vertical lines joined to a horizontal curved line, oblique zig-zag lines emanating from another oblique line and dots.
53. Irregular arcs, one above the other.
54. Hatched rectangles and double bordered diamonds with short strokes below.
55. Irregular hatched biconvexes.
56. Groups of short slanting strokes with short vertical strokes on a band.
57. Groups of vertical wavy lines.
58. Groups of vertical lines between a slanting and a horizontal line.
59. Groups of olique lines between two slanting lines and dots below.
60. Oblique lines on a slanting curved line and a wavy line below.
61. Slanting lines to right with vertical strokes on them.
62. Irregular series of loops, one above the other.
63. Vertical line, flanked by slanting strokes to right.
64. Similar to 63, but strokes to left.
65. Slanting lines, intercepted by vertical slanting lines.
66. Wavy lines, joined to vertical line.
67. Ladder, dots and wavy lines.
68. Vertical strokes with thick ends turned to left.
69. Groups of intersecting lines.
70. Slanting strokes and arcs.
71. Short sigmas and hatched squares.
72. Chevrons, one above the other.
73. Short groups of wavy lines.
74. Zig-zags, placed horizontally.
75. Vertical line, flanked by strokes on either sides or tree design.

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76. Oblique lines, flanked by slanting strokes only on one side.
77. Hatched diamond with hooked end.
78. Irregular hook with arcs.
79. Radiating groups of arcs and lines.
80. Group of parallel wavy lines.
81. Hatched strokes.
82. Dots and slanting lines with strokes.
83. Slanting lines, capped by strokes on the right, circle at the bottom and a row of dots.
84. Groups of vertical bands filled with hatched lines alternated by empty circles.

Sub-Period IB

In this sub-Period the quantity of pottery increased appreciably, indicating thereby that Ahar was more densely populated during those days.

Shapes

Almost all the shapes and varieties of the preceding sub-Period are repeated. The following are the new shapes introduced :

85. Small bowl with a beaked rim and a carination below the rim.
86. Bowl with an out-turned rim and blunt-carinated shoulder.
87. Bowl with an incurved rim and blunt-carinated shoulder, painted both internally and externally in groups of slanting lines.
88. Bowl with concave sides and sharp-carinated shoulder.
89. Bowl with a flaring rim and sharp-carinated shoulder.
90. Bowl with an everted rim and convex sides.
91. A bigger bowl than 90 with a smaller rim.
92. Small bowl with a sharpened flaring rim and hemispherical body, painted externally in loops.
93. Deep bowl with an everted sharpened rim and carinated shoulder, painted both internally and externally.
94. Sub-spherical bowl with a sharpened rim.

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95. Deep bowl with a sharpened rim and gently convex sides, painted externally in hatched diamonds intercepted by group of vertical lines.
96. Smaller deep bowl with a small protruded rim and convex sides.
97. Deep bowl with an oblique cut splayed-out rim and convex body.
98. Small globular pot, painted externally in triangles between horizontal bands.
99. A variant of 98 with possibly elongated body, out-turned rim and ridges on the exterior, painted externally in circles and strokes.
100. Pot with a concave neck and convex body.
101. Small deep bowl with almost straight sides and flat base.
102. Pot with a flaring rim, almost straight neck and ridged shoulder, painted externally in groups of zig-zag.
103. Lid with possibly low domical top, projection low to fit in the mouth of the container.
104. Globular pot with high concave neck.
105. Pot with high tapering neck and possibly globular body. Two ridges and a rope pattern on the exterior.
106. Stepped dish, painted internally in groups of oblique strokes.
107. Similar to 106 but with a prominent ridge on the exterior.
108. Bowl with bulbous sides possibly affixed to a stemmed stand.
109. Possibly a carinated bowl with flaring high sides and carination near the base. Possibly on stand, painted internally in group of arcs.

Painted designs

110. Thick empty circles.
111. Empty circles and group of dots.
112. Chevron-like oblique lines flanked by dots and spirals.
113. Hatched diamonds intercepted by group of vertical lines.

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114. Empty diamonds formed by combination of pairs of lines with dots in between.
115. Empty diamonds formed by pairs of lines with only the right chevron dotted and flanked by horizontal pair of lines partially dotted in between.
116. Horizontal chevrons opening to right formed by short but regular strokes.
117. Group of five slanting lines crossing the fringe of another group of five lines.
118. Groups of vertical lines alternated by horizontal diamonds flanked by pairs of lines with dots; an irregular empty circle in the centre; the entire design flanked by a band below.
119. Groups of vertical lines alternated by shallow vertically open chevrons formed by double lines with dots in between.
120. Slanting parallel lines with dots in between meeting in the fashion of chevron and spirals.
121. Internally hatched zig-zag with spirals in the triangle.
122. Intersecting slanting lines divided by groups of vertical straight lines and bordered below by a short cut of short vertical strokes.
123. Diamonds formed by double lines dotted in between and vertical strokes below.
124. Cross hatched diamonds in a horizontal row.
125. Single line zig-zag with spirals in the triangle.
126. Double line loops, bordered below by a straight line.
127. Intersecting single line loops.
128. Multiple line loops, bordered below by a straight line.
129. Group of arcs.
130. Double line diamonds with individual circle in the centre and separated by a group of vertical straight lines.
131. Slanting lines emanating from a straight line in opposite directions. Vertical straight lines.
132. Single line zig-zag, bordered below by short slanting strokes.

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133. Internally hatched double lines placed like chevron.
134. Double line zig-zag, bordered below by a straight line thus forming a row of triangles, the arms of triangles alternately superimposed by dots.
135. Groups of short horizontal lines and short strokes in a row.
136. Row of connected spirals.
137. Groups of slanting lines drawn alternately in opposite directions, bordered below by a row of short strokes.
138. Slanting parallel lines, supporting groups of slanting lines drawn almost at right angles.
139. Internally hatched alternately straight and slanting biconvex, bordered below by a row of dots.
140. Double line internally hatched intersecting diamonds.
141. Groups of slanting lines divided by groups of vertical lines.
142. Alternate horizontal and slanting biconvexes.
143. Groups of slanting lines drawn alternately in opposite direction and bordered below by a row of short strokes.
144. Intersecting slanting lines enclosed by vertical straight lines in a horizontal row.
145. Groups of intersecting slanting lines suprimposed in the centre by concentric circles and separated by groups of straight vertical lines.
146. Groups of parallel zig-zags.

Sub-Period IC

The quantity of pottery reduced to a great extent in sub-Period IC. Some of the shapes of the earlier sub-Periods have been repeated. They are as follows :

(1) Bowl with convex sides.
(2) Deep bowl with convex sides and nail headed rim on the outside.
(3) Big bowl with bulbous sides and slightly flaring rim.
(4) Similar to 3 but with ridges and slightly beaded out rim.

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Amongst the new types carinated bowls are the most important. The following are the new types :

147. Bowl with a flaring rim and sharp-carinated shoulder.
148. A variant of 147 with carination on the interior as well.
149. Another variant.
150. Another variant, painted externally in irregular dots.
151. Small bowl with a featureless rim, straight sides and blunt-carinated shoulder.
152. Bowl with straight sides getting convex towards the base.
153. Bowl with small out-turned rim and smooth convex sides, painted internally in vertical strokes and externally in chevron-like double lines.
154. Small-sized globular pot with short concave neck and splayed-out rim.

New Painted Designs

155. Latticed diamonds in two registers.
156. Rows of lines slanting to left.
157. Double diamonds in dotted outline with a circle inside alternated by a group of vertical lines.
158. Double ovals in dotted outline connected with each other and loop inside.
159. Group of wavy lines.
160. Group of vertical lines alternated by double row of dots.
161. Horizontal wavy line capped by bisected oval above.
162. Deep bowl with sharpened flaring rim and bulbous body, painted internally in double lines filled with dots and externally in dots, spirals and double lines filled with dots.
163. Bowl with almost straight sides, sharpened rim and carination at the shoulder, painted externally in dots.

2. OTHER SITES IN SOUTH-EASTERN RAJASTHAN (Plates III and IV)

The types yielded by the exploration in the triangular area in south-eastern Rajasthan were similar to those at Ahar. Bowl happened to be the predominant type and paintings included vertical oblique

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lines, dots, zig-zags and concentric circles, intersecting arcs and chevrons. The following are the main types (Figs. 23, 24 and fig. 25, nos. 21 to 25) :

1. Bowl with a sharpened flaring rim and convex body.
2. A variant of 1.
3. Deep bowl with a small flaring rim and elongated convex sides.
4. Bowl with an out-turned rim and smooth convex sides, painted internally in concentric circles and vertical strokes.
5. A variant of 4, painted externally in series of dots placed horizontally.
6. Bowl with an everted rim and bulbous body painted externally in vertical strokes.
7. Bowl with a concave neck, flaring rim and blunt-carinated shoulder.
8. Bowl with an everted rim and convex sides and cardoned shoulder, painted externally in hatched slanting lines.
9. A variant of 8 having two ridges on the shoulder, painted externally in dots.
10. Another variant of 8, painted externally in zig-zags.
11. Bowl with an out-turned rim and convex sides.
12. Bowl with almost straight sides getting convex towards and having bands at the shoulder.
13. Bowl with a beaked rim and smooth convex sides, painted externally in vertical lines.
14. Pot with a concave neck and bulbous body.
15. Pot with an out-turned flattened rim and straight neck.
16. Bowl with a splayed-out rim and smooth convex sides.
17. Bowl with a flaring beaked rim and convex sides.
18. Shallow bowl with a flattened rim and sides tapering down, painted internally in group of oblique lines.
19. Bowl with a sharpened rim and convex sides.
20. Bowl with a small flattened rim and convex body.
21. Pot with an everted rim, incurved neck and carinated shoulder.

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22. Bowl with a small flaring rim and bulbous body.
23. Bowl with a small incurved rim, ledged shoulder and convex body.
24. Bowl with flaring sharpened rim, painted externally in double slanting lines hatched in between and separated by group of vertical lines.
25. Dish with a featureless rim and rounded bottom.

3. GILUND (Plate V)

The following main types occurred during the course of excavation on a limited scale (Fig. 25, nos. 26 to 29) :

26. Bowl with a splayed-out beaked rim and elongated convex sides, painted both internally and externally in vertical strokes.
27. Bowl with an everted rim and convex sides, painted both externally and internally in vertical and oblique lines.
28. Bowl with a flattened beaked rim and convex sides.
29. Pot with a flaring rim and possibly bulbous body, painted externally in groups of slanting lines.

4. ERAN

Two varieties of Black-and-Red Ware have been reported from the ancient site of Eran viz., (1) Thick, course and gritty Black-and-Red Ware and (2) Thinner, finer and less gritty Black-and-Red Ware. The former is mostly dull red devoid of any slip. In a very limited number of cases slip has been applied. The core is gritty and blackish. The standard of manufacturing is not very high, so as to give the fragments a metallic sound. Fragments having a dark brown exterior have also been included in this category. The interior surface has been burnished for painting. In a majority of the cases the black colour on the exterior forms a horizontal line. The exterior surface is sometimes burnished as well. The thinner variety *i.e.*, no. 2 is finer and less gritty. Both the surfaces are usually burnished. The core is blackish.

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The frequency of various shapes in the Black-and-Red Ware are in the following order :

1. Bowls.
2. Dishes.
3. Basins (few).
4. Jars (rare).

The following are the main types in the Black-and-Red Ware (Figs. 26 to 32) :

1. Medium-sized deep basin with splayed-out rim and smooth convex sides.
2. Bowl with an incurved rim and smooth convex sides.
3. Bowl with internally bevelled edge and almost straight sides.
4. Bowl with an oblique-cut everted rim and sides tapering down, painted internally in vertical strokes and zig-zags.
5. Bowl with almost straightened rim and smooth convex sides.
6. Small shallow bowl with straight-edged rim and blunt-carinated shoulder.
7. Small bowl with thin straight pointed rim, almost straight sides and flat base.
8. Deep bowl with thin incurved rim and sides tapering down.
9. Shallow bowl with straightened rim and incipient shoulder.
10. Deep bowl with featureless rim.
11. Bowl with a flattened rim, painted internally in oblique bands alternately cut with short strokes producing a ladder-like motif joined with a vertical stroke on the left.
12. Bowl with a flattened rim, painted internally in diagonally placed group of oblique lines.
13. Bowl with outgoing sides, painted internally in group of oblique and short vertical strokes.
14. Dish with an internally flanged rim, painted internally in group of oblique bands.

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15. Bowl with an internally flanged rim, painted internally in group of oblique lines.
16. Bowl with featureless rim and sides tapering down.
17. Shallow bowl with featureless rim.
18. Dish with a thick rounded rim, sides tapering down, grooved internally.
19. Dish with a flattened rim, painted internally in comb-like motif.
20. Bowl with an internally beaked rim.
21. Bowl with a sharpened rim and very smooth convex sides, painted internally in group of vertical wavy lines.
22. Bowl with outgoing sides and painted rim.
23. Bowl with externally oblique-cut rim.
24. Bowl with a flattened splayed-out rim and narrow base, painted internally in plant-like pattern.
25. Basin with a thickened flattened rim, painted internally in group of oblique and horizontal lines.
26. Deep dish with a thickened flattened rim, painted internally in oblique and horizontal lines.
27. A variant of 26 with splayed-out flattened rim and internally corrugated sides, painted on the interior surface in vertical strokes on a slanting line separated by group of vertical lines and dots below.
28. Bowl with a beaded rim and blunt-carinated shoulder.
29. Bowl with an incurved rim.
30. Deep bowl with a pinched rim.
31. Bowl with a flattened rim, painted internally in vertical strokes.
32. Vase with a flattened rim and high neck.
33. Bowl with an expanded rim.
34. Convex-sided bowl.
35. Vase with a concave neck, painted internally in oblique lines.
36. Small bowl with a sharpened flaring rim and blunt-carinated shoulder.

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37. Bowl with a flattened rim and convex body.
38. Bowl with a featureless rim and wide mouth.
39. A variant of 38.
40. Bowl with featureless rim.
41. Pot with a constricted neck, beaked rim and elongated outgoing sides.
42. Pot with out-turned flat rim and smooth concave shoulder.
43. Bowl with out-turned flaring rim and smooth concave sides, grooved internally.
44. Bowl with a sharpened rim, almost straight sides getting convex towards the base.
45. Shallow bowl with a small everted rim and convex sides.
46. Shallow bowl with internally thickened rim.
47. Fragment of a channel-spout, painted in cross bands internally and triple loop-like bands around the base.
48. Fragment, painted in horizontal strokes over oblique lines.
49. Fragment, painted in herring bone pattern.
50. Fragment, painted in small arcs.
51. Fragment, painted in ripple-like lines.
52. Fragment, painted in oblique lines.
53. Fragment, painted in thick oblique lines.
54. Fragment, painted in irregular strokes.
55. Fragment, painted in vertical strokes on horizontal lines.
56. Fragment, painted in irregular lines.
57. Fragment, painted in ladder like pattern.
58. Fragment, painted in wavy lines.

5. NAVDATOLI (Plates VI to VIII)

In the beginning when the excavation at Navdatoli was undertaken alongwith the ancient site of Maheshwar, the proto-historic levels (Chalcolithic) were exposed in a very limited area. Later on, a large scale excavation was conducted at Navdatoli, which yielded an appreciably good quantity of Black-and-Red Ware. Of the four Phases, the painted variety with its distinctive fabric occurs only in Phases I and II. Very little of this feature appears in Phases III and IV.

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In Phase III there are few examples of bowls with painting in white, but the most important is the occurrence of a variety with the white painting done in dots, and a large vessel with a group of three wavy lines suspeneded from the rim. Painting in Phase III is either a survival or might have been derived while levelling the debris of earlier Phase.

Like other sites, bowl is the predominant type at Navdatoli as well. The following are the main shapes (Figs. 33 to 38) :

Phase I

1. Bowl with almost straight sides getting convex towards the base.
2. Bowl with a flaring rim, concave neck and smooth convex sides, painted externally in vertical lines hatched in between and dots below.
3. Bowl with a slightly out-turned rim and smooth convex sides, painted internally in oblique strokes.
4. Bowl with a flaring rim, concave neck and sides getting convex towards the base, painting internally in oblique strokes and dots below.
5. A variant of 4.
6. Another variant of 4.
7. Another variant of 4.
8. Bowl with an out-turned rim, painted internally in group of two vertical strokes and dots below.
9. A variant of 8, painted in group of three strokes.
10. Bowl with a sharpened flaring rim and almost straight sides, painted externally in oblique lines.
11. Bowl with a flaring rim getting narrower at the base, painted in vertical strokes.
12. Bowl with sharpened rim tapering down, painted in vertical lines.
13. Bowl with a flaring rim, painted internally in oblique strokes.
14. Bowl with a sharpened flaring rim, painted internally in group of zig-zags and horizontal lines.

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15. A variant of 14, painted internally in horizontal lines.
16. Fragment of a bowl with flattened rim, painted internally in concentric arcs.
17. Bowl with flaring rim, concave sides and carinated shoulder.
18. Pot with an incurved straightened rim and bulbous body corrugated externally, painted in oblique lines between horizontal bands.
19. Pot with incurved rim and bulbous body, painted in groups of three vertical lines.
20. Pot with incurved rim and blunt-carinated shoulder, painted externally in vertical lines and dots below.
21. Bowl with an incurved obliquely-cut rim and convex sides, painted in series of dots, one above the other, placed vertically.
22. Bowl with a sharpened flaring rim and blunt-carinated shoulder, painted in groups of three zig-zags placed vertically.
23. Bowl with an internally oblique-cut rim, painted in vertical lines and zig-zags.
24. Bowl with an internally oblique-cut rim and convex sides, painted in intersecting oblique lines making diamonds.
25. Bowl with convex sides and incurved rim, painted in diamonds divided into two and dots below.
26. Bowl with an everted rim and smooth convex sides, painted in hatched diamonds.
27. Bowl with an incurved straightened rim and convex sides, painted in groups of two slanting lines meeting each other in a triangular fashion.
28. Pot with an incurved straightened rim and bulbous body, painted in groups of three slanting lines meeting each other in a triangular fashion.
29. Bowl with an incurved rim and carinated shoulder, painted in groups of two slanting lines meeting each other in a triangular fashion.

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30. Footed base of a bowl.
30a. Variant of 30.
30b. Another variant of 30.

Phase II

31. Small bowl with a flaring rim and smooth convex sides towards the base, painted in groups of loops in several registers.
32. Pot with a straightened rim and bulbous body, painted externally in group of two vertical zig-zags and dots below.
33. A variant of 32, painted externally in intersecting slanting lines with dots below.
34. Fragment, painted in slanting lines making diamonds.
35. Bowl with an incurved rim and blunt-carinated shoulder, painted externally in vertical curved lines.
36. Bowl with a small everted rim and convex body, painted externally in oblique strokes between horizontal lines.
37. Bowl with a short everted rim and convex sides, painted externally in series of dots placed in an angular manner.
38. Bowl with an oblique-cut rim and convex sides, painted externally in vertical lines and dots.
39. Pot with a sharpened everted rim and globular body.
40. Shallow bowl with a small everted rim and blunt-carinated shoulder, painted externally in groups of vertical strokes.
41. Bowl with a sharpened everted rim and convex sides, painted externally in dots.
42. A variant of 41.
43. Bowl with a sharpened rim and blunt-carinated shoulder, painted externally in vertical and horizontal lines.
44. Bowl with a splayed-out sharpened rim, concave neck and carinated shoulder, painted externally in dots arranged vertically in chevron-like pattern.
45. Fragment of a bowl with a sharpened rim, painted in diamond-like pattern.

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Phase III

46. Bowl with a concave neck and carinated shoulder tapering down.
47. Bowl with a flaring sharpened rim and blunt-carinated shoulder.
48. Bowl with an under-cut rim and smooth convex sides.
49. Bowl with splayed-out rim and outgoing sides.
50. Bowl with a small beaded rim and almost straight sides.
51. Bowl with sides tapering down and pinched rim.
52. Shallow bowl with small everted rim and convex sides.
53. Pot with a high concave side and carinated shoulder, painted externally in groups of vertical wavy lines.
54. Pot with a long splayed-out rim and carinated shoulder.
55. Shallow bowl with an everted rim and blunt-carinated shoulder.
56. Shallow bowl with sharpened splayed-out rim and convex sides.
57. Bowl with a sharpened flaring rim and blunt-carinated shoulder.
58. Bowl with a sharpened flaring rim and smooth convex sides.
59. Bowl-on-stand.
60. Base of a bowl-on-stand.
61. Basin with an internally oblique-cut rim and cardoned shoulder.

Phase IV

The types occurring in Phase IV are similar to those found from early historical sites and the excavator has no hesitation in calling them "Historical Black-and-Red Ware", as they indeed are, stratigraphically. In view of the thinness of deposits, their exact Period cannot be indicated. The following are the main types :

62. Bowl with a sharpened flaring rim, concave neck and carinated shoulder.

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63. Bowl with a sharpened flaring rim and carinated shoulder.
64. Bowl with an incurved rim and blunt-carinated shoulder.
65. Bowl with a flaring rim and blunt-carinated shoulder.
66. Bowl with an out-turned rim, concave neck and carinated shoulder.
67. Bowl with straight sides and carinated shoulder.
68. Bowl with featureless rim and convex-sides grooved externally.
69. Bowl with a featureless rim.
70. Deep convex-sided bowl, painted in oblique strokes.
71. Convex-sided bowl with straight edged rim.
72. Convex-sided bowl smaller in size.
73. Small bowl with a straight-edged rim.
74. Convex-sided bowl.
75. Bowl with a slightly flaring rim and convex sides.
76. Bowl with a flaring rim and smooth convex sides.
77. Shallow bowl with a straight-edged rim.
78. Pot with an internally beaked rim, concave neck and smooth convex sides grooved externally.
79. Bowl with a beaded under-cut rim and sides tapering down.
80. Pot with a beaded splayed-out rim, almost straight neck and ridged shoulder.
81. Bowl with an incurved thickened rim and smooth convex sides.
82. Bowl with thickened rim, under-cut below and smooth convex sides.
83. Pot with internally grooved thickened rim and concave neck.
84. Shallow bowl with an incurved rim.
85. Pot with a flaring rim, concave neck and outgoing sides grooved externally at the shoulder.
86. Bowl with a sharpened everted rim and smooth convex sides.
87. Shallow bowl with an incurved rim.

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88. Pot with flattened grooved rim, outgoing neck and ridged shoulder.
89. Pot with a splayed-out rim and bulbous body.
90. Bowl with a flaring rim, blunt-carinated shoulder tapering down.
91. Bowl with an incurved straightened rim.
92. Shallow bowl with incurved rim.
93. Pot with a flaring rim and concave neck.
94. Small pot with flaring rim.
95. Pot with a splayed-out sharpened rim and elongated bulbous body.
96. Base of a multi-legged vessel.

Fabric

The fabric of the painted Black-and-Red ware is coarse, of ill-levigated clay and as such very light and porous. The slip has been applied when the vessel was leather hard. It is thus comparatively thick. The surfaces were then burnished; sometimes they are very smooth, but often coarse. Painting around the rim on the outside and sometimes inside was done before firing. The slip contained some mica. As a rule, the outside surface is red, but owing to indifferent firing, possibly because of the varying nature of the contents of the slip, the red has shades of red, sepia, tan, and very rarely fine red. The rim is black or grey, so also the inside which is occasionally fine glossy black, but often dull black, and at times even sepia or tan. The Black-and-Red Ware had restricted or specialized function.

6. KAYATHA

The Black-and-Red Ware occurs in Periods II and III. The ceramic appears to have been a table ware as indicated by the shapes. The vessels are generally thick sectioned having a coarse fabric. The red colour on the exterior varies from ornage to deep red and tan and the black is very often jet black. A limited number of vessels have greyish surface. Owing to indifferent firing some of the vessels

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are either completely red or completely black. Majority of the pots are painted in white pigment over black surface. The paintings are confined to the rim and the upper part of the vessels. Some of the shallow bowls also bear painted dessigns on the interior surface of the rim. The repertoire of painted patterns comprise linear and geometrical designs. Although the painting is obviouly pre-firing, it has disappeared in a number of cases. As usual bowl is the predominant type.

The following are the main shapes (Figs. 39 to 41 and fig. 42, nos. 40 to 45) :

Period II

1. Bowl with incurved sides and sharpened rim.
2. Bowl with a sharpened rim, almost straight sides and blunt-carinated shoulder, painted externally in oblique strokes and horizontal line.
3. Bowl with a sharpened rim and slightly incurved sides, painted externally in groups of strokes between horizontal lines.
4. Bowl with a sharpened flaring rim, concave neck and carinated shoulder.
5. Bowl with an internally oblique-cut rim and straight sides, painted externally in groups of loops in several registers.
6. A variant of 5, painted externally in dots.
7. Pot with a flaring rim and concave neck, painted externally in oblique strokes on a horizontal line.
8. Bowl with a sharpened rim, blunt-carinated shoulder and convex body.
9. Bowl with a sharpened flaring rim and smooth convex sides ridged externally, painted on the exterior surface in groups of loops.
10. Pot with outgoing sides, painted in group of horizontal and vertical lines making quadrilaterals.
11. Bowl with a sharpened flaring rim and straight sides, painted in two lines of dots placed obliquely, vertical strokes, both between horizontal lines.

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12. Bowl with an out-turned rim and sides tapering down, painted externally in group of loops between horizontal lines.
13. Bowl with a sharpened everted rim and convex sides, painted externally in groups of slanting strokes.
14. Pot with a sharpened flaring rim, incurved and corrugated sides, carinated shoulder and convex body.
15. Pot with a sharpened flaring rim, incurved corrugated neck and carinated shoulder.
16. Bowl with a sharpened flaring rim and convex sides, painted externally in hatched diamond between horizontal lines.
17. Bowl with a sharpened flaring rim and elongated convex sides corrugated externally, painted on the exterior surface in groups of vertical wavy lines.
18. Globular pot with everted rim, painted externally in oblique lines.
19. Pot with a sharpened straight-edged rim, incurved neck and carinated shoulder, painted in group of chevrons.
20. Pot with a beaked rim and outgoing sides, painted in hatched diamonds between horizontal lines in two registers.
21. Pot with a bulbous body, painted in vertical lines cutting group of horizontal lines.
22. Fragment of a bowl with flaring rim and smooth convex sides, painted in two lines of dots placed in a chevron-like manner.
23. Bowl with a flaring rim and almost straight sides, painted in groups of vertical wavy lines.
24. Bowl with a splayed-out rim, straight neck and sharply-carinated shoulder.
25. Shallow bowl with a sharpened out-turned rim and carinated shoulder.
26. A pot with a sharpened everted rim, corrugated neck and carinated shoulder.

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27. Pot with a flaring rim and outgoing sides.
28. Pot with a sharpened flaring rim, corrugated incurved neck and carinated shoulder, painted in group of vertical lines.
29. Pot with a sharpened flaring rim and elongated convex sides, painted externally in group of slanting lines placed between horizontal bands.
30. Bowl with a flaring rim, painted in groups of oblique and vertical lines, dots and horizontal band.
31. Bowl with splayed, out rim and straight sides, painted in groups of vertical strokes between horizontal lines.
32. Bowl with sharpened rim, painted in herring-bone pattern between horizontal lines.
33. Fragment of a bowl with smooth convex sides, painted in groups of loops between horizontal lines.
34. Pot with a sharpened rim and straight sides, painted in groups of chevron-like lines separated by oblique lines between horizontal lines.
35. Bowl with a sharpened flaring rim and almost straight sides, painted in wavy lines between horizontal lines.
36. Bowl with a sharpened rim and incurved sides, painted in oblique lines cutting each other between horizontal lines.

Period III

The shapes of Period II repeated are 1, 3, 14, 15, 18 and 26.

The following are the new shapes :

37. Fragment, painted in groups of oblique strokes and dots.
38. Bowl with a sharpened rim and straight sides, painted in oblique strokes on horizontal band between horizontal lines.
39. Shallow bowl with internally oblique-cut rim and carinated shoulder.
40. Pot with high concave neck and carinated shoulder, painted internally in oblique strokes and externally in vertical wavy lines.
41. Fragment of a bulbous pot, painted in group of oblique lines on slanting lines.

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42. Fragment, painted in criss cross lines and horizontal bands.
43. Shallow bowl with smooth convex sides.
44. Dish with a featureless rim.
45. bowl with a sharpened flaring rim, almost straight sides getting convex towards the base.

7. NAGDA

Though it is of the same family, the Black-and-Red Ware has been described as Black-and-Cream Ware in Period I at Nagda. The shapes in this fabric are limited and the same is the case with paintings. Bowl is the main type and the designs in painting are oblique or vertical strokes or dots.

The following shapes occur at Nagda (Fig 42, nos. 46 to 49) :

Period I

46. Bowl with an everted beaded rim and carinated shoulder.
47. Bowl with a sharpened flaring rim and blunt-carinated shoulder.
48. Bowl with a splayed-out rim and convex sides.
49. Bowl with a beaded rim and smooth convex sides.

8. UJJAIN

Bowls with almost straight sides, sharpened rim and flat base and dish with a featureless rim are the common types represented at Ujjain. Deep bowls with flat base and concave sides and shallow dishes with a straight-edged rim are also available. They are devoid of any paintings and have a semblance of early historical Black-and-Red Ware.

The following shapes have been reported (Fig. 43, nos. 1 to 5) :

1. Bowl with a slightly incurved rim.
2. A variant of 1.
3. Bowl with straight sides and blunt-carinated shoulder.
4. Bowl with a thickened rim and flat base.
5. Flat base of a bowl.

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9. AVRA

Avra has yielded both plain and painted varieties of Black-and-Red Ware. They are as follows (Fig. 43, nos. 6 to 13) :

6. Deep bowl with a splayed-out sharpened rim and sides narrowing down towards the bottom. It is painted externally in an oblique line crossed by other smaller oblique lines.
7. Deep bowl with a sharpened flaring rim and almost straight sides, painted externally in oblique lines over a horizontal line.
8. Deep bowl with a sharpened flaring rim and sides narrowing down towards the bottom. It is painted externally in angular lines with the apex facing each other. One of the angular lines is placed on a horizontal band.
9. Bowl with a thickened sharpened rim, ledged shoulder and convex body, painted internally in groups of oblique slashes.
10. Bowl with a sharpened rim, painted externally in diamonds divided into two by lines.
11. Deep bowl with incurved neck, slightly flaring rim and carinated shoulder, painted externally in a pattern similar to 10.
12. Painted fragment having a pattern of irregular lines touched by oblique strokes.
13. Painted fragment with a design of wavy lines.

REGION C

In this region also, like Region B, painted variety of the Black-and-Red Ware occurs. In the western part of the area the quantity is insignificant, but in the eastern part it again gains an upper hand. The most important site excavated in this region so far is Chirand in Saran District of Bihar.

1. KAUSAMBI

The Black-and-Red Ware encountered at Kausambi is extremely coarse. The clay used is mixed up with a large quantity of rough

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organic material and very small pieces of stone, used as degraissant. The rugged texture full of small cavities was on account of this mixture. The pottery, according to the excavator, was manufactured on a slow wheel and fired in an inverted position at a low temperature. A limited number of fragments have a bright red or black slip.

The types represented are few and restricted to jars. They are as follows (Fig. 44, nos. 1 to 5) :

1. Fragment of a jar with an incured rim grooved externally.
2. Fragment of a vessel with tapering sides corrugated externally.
3. Fragment of a jar with an externally bevelled rim.
4. Fragment of a jar with an expanded rim and almost straight sides.
5. Fragment of a jar with an internally clubbed and externally oblique-edged rim and high neck which is slightly concave.

Some of the sherds of Black-and-Red Ware are painted in white over a black-slipped surface.

2. KOLDIHWA

The excavator has not given any illustration of the Neolithic Black-and-Red Ware. In the illustrations given for the Chalcolithic Period he has not cared to distinguish between the Black-and-Red Ware and Black-slipped Ware. Hence there are possibilities of some error in the following shapes taken to represent the former (Figs. 45 and 46) :

1. Deep bowl with a short everted rim grooved at the neck.
2. A variant of 1.
3. Deep bowl with a thickened rim, flanged shoulder, smooth convex sides and almost flat base.
4. Deep bowl with smooth convex sides and a small footed base.
5. Vase with a splayed-out rim internally beaked.
6. Vase with a flaring rim and globular body.
7. Dish with incurved sides and pinched rim.

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8. Bowl with an internally oblique-cut rim and smooth convex sides.
9. Small bowl with a flaring rim, outgoing sides and carinated shoulder.
10. Deep bowl with sides tapering below.
11. Bowl with a sharpened rim and smooth convex sides.

3. RAJGHAT

The quantity of Black-and-Red Ware at Rajghat is not large and similar is the case of shapes. The following are main types (Fig. 44, nos. 6 to 10) :

6. Vase with a flaring thickened rim and banded shoulder.
7. Vase with a clubbed rim.
8. Bowl with an internally thickened rim.
9. Bowl with a flat cut and thickened rim.
10. Bowl with a splayed out rim and blunt-carinated shoulder. The painted designs are restricted to dots and strokes.

4. SOHGAURA

The Black-and-Red Ware from Sohgaura is much more sophisticated. The excavation conducted later on yielded new types and designs, but they are yet to be published. Only two shapes have so far been published in Indian Archaeology—A Review, 1961-62. They are as follows (Fig. 44, nos. 11 and 12) :

11. Bowl with an inturned rim and blunt-carinated shoulder.
12. Bowl with a flat-edged rim and straight sides, painted internally and externally in oblique and circular strokes.

5. CHIRAND (Plate IX B)

The following are the main types (Figs. 47 to 50) :

Neolithic

1. Bowl with a sharpened flaring rim and smooth convex sides, decorated externally in cord pattern.

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2. Footed bowl with a splayed-out thin rim and smooth convex sides.
3. Lower part of a pedestalled bowl.
4. Bowl with a flattened rim and smooth convex sides.
5. Bowl with a sharpened flaring rim.
6. A channel-spout.

Chalcolithic

7. Deep bowl with a flaring rim, banded neck and blunt-carinated shoulder.
8. Bowl with a featureless rim.
9. Bowl with a thickened rim.
10. Bowl with an everted rim, grooved neck and blunt-carinated shoulder.
11. Deep bowl with a flaring rim and almost straight sides.
12. Vase with a long splayed-out rim.
13. Vase with a cancave neck and long flaring rim.
14. Vase with a very long projected rim.
15. A variant of 14.
16. Bowl with an internally grooved rim.
17. Bowl with a sharpened flaring rim.
18. Dish with a straight-edged rim.
19. Bowl with a featureless rim, decorated externally in cord-like incised pattern.
20. Bowl with a thickened rim and convex sides.
21. Bowl with a rounded rim and smooth convex sides.
22. Bowl with a sharpened flaring rim.
23. Dish with an internally thickened rim.
24. Dish with a flat sharpened rim and blunt-carinated shoulder.
25. Dish-on-stand.
26. Bowl with a straight-edged rim.
27. Bowl with an internally thickened rim.
28. Dish with a straight-edged rim and blunt-carinated shoulder.
29. Dish with a pinched grooved rim, blunt-carinated shoulder and flat base, painted internally in groups of wavy lines.
30. A channel spout.

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6. SONPUR (Plate X)

The Black-and-Red Ware at Sonpur in the Proto-historic Period is of two varieties. In Period IA it is coarse, whereas in IB it gets sophisticated. The prominent pottery types in IA are dish, vase and bowl, sometimes tipped or perforated. Bowls of sub-Period IA happened to be much bigger than those of the succeeding sub-Period. Though rimless bowls are not completely absent from the earlier sub-Period, it is a characteristic of IB. In sub-Period IA the bowls have a beaded and flaring rim with almost straight sides. Carinated and lipped bowls make their appearance only in sub-Period IB. Dishes are popular only in IB.

The following are the main types (Figs. 51 to 57) :

Period IA

1. Vase with a splayed-out rim.
2. A variant of type no. 1.
3. Vase with an oblique-cut rim.
4. Vase with a flaring beaked rim.
5. Dish with a blunt-carinated shoulder.
6. Bowl with a straight-edged rim and convex sides.
7. Bowl with a sharpened rim and almost straight sides.
8. Deep bowl with an incurved sharpened rim.
9. Bowl with an internally grooved rim.
10. Bowl with a small everted rim and smooth convex sides.
11. Bowl with a beaded rim.
12. Bowl with a sharpened outgoing rim.
13. Bowl with an outgoing rim.
14. Convex-sided bowl.
15. Bowl with an outgoing rim and smooth convex sides.
16. Bowl with a flaring rim and convex sides.
17. Bowl with an internally turned rim flaring at the tip and blunt-carinated shoulder.
18. Bowl with a pinched rim.
19. Bowl with a sharpened flaring rim.

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20. Bowl with an internally thickened rim and smooth convex sides.
21. Bowl with a featureless rim and smooth convex sides.

Period IB

22. Bowl with an everted rim and almost straight sides.
23. Bowl with a flaring rim and almost straight sides.
24. Bowl with a concavo-convex profile.
25. Bowl with a sharpened outgoing rim.
26. Bowl with a flaring rim and flat base.
27. Bowl with a featureless rim and straight sides.
28. Bowl with a straight-edged rim and cardoned shoulder.
29. Vase with an obliquely splayed-out rim.
30. Bowl with a pinched rim and blunt-carinated shoulder.
31. Bowl with a thinned-out rim and smooth convex sides.
32. Dish with a slightly incurved rim and carinated shoulder.
33. Dish with slightly outgoing sides and carinated shoulder.
34. Bowl with a sharpened outgoing rim.
35. Bowl with a pinched rim and convex sides.
36. Bowl with a sharpened flaring rim and convex sides.
37. Bowl with a flaring beaded rim.
38. Bowl with an oblique-cut rim.
39. Bowl with straight-edged rim.
40. Bowl with a sharpened rim.
41. Bowl with a sharpened flaring rim.
42. Bowl with a thinned-out rim.
43. Dish with an inturned straight-edged rim.
44. Convex-sided bowl.
45. A lipped bowl.
46. Bowl with smooth convex sides.
47. Shallow bowl with a featureless rim.
48. Dish with a featureless rim.
49. Dish with oblique sides and carinated shoulder.

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7. PANDU-RAJAR-DHIBI (Plates XI and XII)

Only two types can be made out from the available report. One is a bowl with a concavo-convex profile and the other a convex-sided bowl. The former is painted internally in groups of oblique line meeting each other and also placed one over the other (Fig. 44, nos. 13 and 14).

REGION D

The Black-and-Red Ware in this region is generally contemporaneous with the Painted Grey Ware, but for a few sites like Atranjikhera, Noh and Jodhpura, where it occurs in pre-Painted Grey Ware level and continues with it. The types are almost similar to those in the Painted Grey Ware. They are all devoid of any painting.

1. ATRANJIKHERA

Two varieties of Black-and-Red Ware are available from the site, one coarse and the other fine. The former variety appears to have been hand made.

The following are the main types (Fig. 58, nos. 1 to 9) :

1. Vase with a splayed-out rim and corrugated neck and shoulder.
2. Vase with a flaring rim.
3. Deep basin with a thickened rim and body tapering downwards.
4. Bowl with an internally thickened rim, banded shoulder and a carination near the base.
5. Bowl with a straight-edged rim, mild carination at the shoulder and sagger base.
6. Bowl with a featureless rim and convex sides.
7. Deep bowl with a beaded rim and convex body.
8. Bowl with a flaring beaded rim and convex body.
9. Dish with an incurved rim.

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2. HASTINAPUR

10. The only type reported from Hastinapur is a bowl with vertical sharpened rim, grooves on the shoulder and a carination towards the base (fig. 58, no. 10).

3. SRAVASTI

The quantity of Black-and-Red Ware is substantial at Sravasti. The following are the main types (Fig. 59, nos. 1 to 9) :

1. Dish with an incurved rim and flat base.
2. A variant of type no. 1.
3. Dish with a straight-edged rim, convex sides, and flat base.
4. Dish with an everted rim and carinated shoulder.
5. Dish with slightly incurved sides and carinated shoulder.
6. Bowl with a featureless rim and convex sides.
7. Bowl with an everted rim and raised carinated shoulder.
8. Bowl with an oblique-cut flaring rim and convex body.
9. Bowl with an inturned rim, concave neck and carinated shoulder.

REGION E

Elongation of vessels is a significant feature in this region, besides the painting on the Black-and-Red Ware. Though painting is generally absent from the Black-and-Red Ware found in the Megalithic burials, the elongation is popular. The Black-and-Red Ware of this region is of a fine variety.

1. PRAKASH

Vases have an upper hand at the site and almost all of them are painted both internally as well as externally. The following are the main shapes (Figs. 60 and 61) :

1. Vase with a sharpened flaring rim, concave neck and raised shoulder, painted internally in oblique strokes.
2. Vase with a long concave neck and blunt-carinated shoulder, painted internally and externally in a series of dots on oblique lines.

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3. Small vase with an everted rim and almost straight sides, painted internally in vertical strokes and externally in vertical wavy lines. The external surface carries graffiti as well.
4. Vase with a splayed-out rim and convex body, painted internally in series of dots.
5. Vase with a splayed-out rim and almost straight sides, painted internally in vertical strokes.
6. Vase with a flaring rim, painted internally in groups of dots.
7. Small vase with a flaring rim and smooth convex sides, painted internally in oblique lines and dots.
8. Vase with a flaring rim and convex body, painted internally in vertical and oblique strokes.
9. Small vase with a splayed-out rim and convex body, painted internally in oblique lines and dots.
10. Bowl with a sharpened flaring rim, painted externally in vertical strokes.
11. Vase with a sharpened everted rim and smooth convex sides, painted internally in strokes.
12. Vase with an out-turned rim, oblique sides getting carinated near the base, painted internally in oblique strokes and externally in groups of two lines producing a circular shape. It also carries graffiti marks in the shape of crude human beings.
13. Vase with an out-turned rim and convex body, painted internally in vertical strokes.
14. Vase with a large flaring rim, painted internally in oblique strokes.
15. Vase with a splayed-out rim and convex body, painted internally in oblique and vertical strokes.
16. Vase with a flaring rim and almost straight sides, painted internally in vertical strokes.
17. Vase with an everted rim and smooth convex body, painted internally in vertical strokes.

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18. Vase with a flaring rim and smooth convex body, painted internally in vertical and oblique strokes.
19. Vase with a sharpened flaring rim and concave neck, painted internally in oblique strokes.

2. TEKWADA

The ancient site of Tekwada opposite Bahal is of paramount importance in having yielded painted Black-and-Red Ware from Megalithic burials. Another significant feature is the occurrence of Megalithic burials in Chalcolithic context. Like the funerary vessels from the Megalithic burials in South India, Tekwada Black-and-Red Ware is also elongated. The following are the main types (Fig 62) :

1. Deep bowl with a sharpened flaring rim and blunt-carinated shoulder.
2. Bowl with a flaring rim, concave neck and banded shoulder.
3. Bowl with a flaring rim, concave neck and carinated shoulder.
4. Deep bowl with sharpened rim, corrugated neck and blunt-carinated shoulder.
5. Bowl with a sharpened flaring rim and carinated shoulder.
6. Small bowl with an everted rim, concave neck and carinated shoulder.
7. Bowl with a sharpened flaring rim and convex body.

3. BAHURUPA

The two types reported from Bahurupa are devoid of any painting, though the practice of painting existed there. They are as follows (Fig. 63, nos. 1 and 2) :

1. Vase with a sharpened everted rim, concave neck and carinated shoulder.
2. Vase with a flaring rim, concave neck and globular body.

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4. TEKKALKOTA

Like Tekwada, the ancient site of Tekkalkota also is of great significance in the yield of painted Black-and-Red Ware of an elongated variety. The representative types are as follows (Fig. 63, nos. 3 to 8 and fig. 64, nos. 9 and 10) :

3. Bowl with a sharpened flaring rim, concave neck and carinated shoulder.
4. Bowl with an everted rim, concave neck and carinated shoulder.
5. Vase with a flaring rim, concave neck and carinated shoulder.
6. Small bowl with internally thickened rim.
7. Fragment, painted in vertical lines.
8. Bowl with a sharpened everted rim, concave neck and blunt-carinated grooved shoulder, painted internally in groups of oblique lines and externally in dots.
9. Deep bowl with a sharpened flaring rim, concave neck and carinated shoulder.
10. Deep bowl with a sharpened flaring rim, banded oblique neck and blunt-carinated shoulder, painted internally in dashes.

5. BIJAPUR DISTRICT

The surface specimens from a number of sites in the District are generally plain, devoid of any painting. They are of a fine fabric. Elongation in the vessels is, however, noticed. The following are the main types (Fig. 64, nos. 11 to 18) :

11. Bowl with a flattened rim, broad concave neck and carinated shoulder.
12. Deep bowl with a sharpened smooth flaring rim and banded shoulder.
13. Bowl with a beaked splayed-out rim, long oblique neck and carinated shoulder.
14. Bowl with a beaded rim and carinated shoulder.

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15. Bowl with a splayed-out rim, concave neck and carinated shoulder.
16. Bowl with a sharpened flaring rim and blunt-carinated shoulder.
17. Bowl with a splayed-out rim and sharp-carinated shoulder.
18. Bowl with a thickened rim, internally corrugated neck and carinated shoulder.

Painted fragments have been reported from Watgal.

REGION F

This region has been distinguished mainly on account of the Megalithic burials after which the Black-and-Red Ware came to be known as a distinctive Ware, though in the beginning it was wrongly presumed to have served the purpose of burials only. The utility of the Ware at town sites was brought home only at a later stage. The Black-and-Red Ware of the region is generally unpainted.

1. SISUPALGARH

The types represented at Sisupalgarh are simple bowls and dishes. They are as follows (Fig. 65) :

1. Bowl with a slightly everted rim and carinated shoulder.
2. Bowl with an internally thickened rim and carinated shoulder.
3. Bowl with an internally splayed-out rim, internally turned at the end and banded shoulder.
4. Bowl with a splayed-out beaked rim and corrugated shoulder.
5. Small bowl with a splayed-out beaked rim and banded shoulder.
6. Bowl with sides narrowing down towards the bottom.
7. Small bowl with splayed-out rim and corrugated shoulder.
8. Bowl with a splayed-out rim and carinated shoulder.
9. Dish with a flaring rim and almost straight sides.

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2. KESARPALLE

The Black-and-Red Ware is represented, like Sisupalgarh, by bowls and dishes only. They are as under (Fig. 66, nos. 1 to 8 and fig 67, nos. 9 to 14) :

1. Deep bowl with a splayed-out rim and convex sides corrugated externally.
2. Deep bowl with a featureless rim.
3. Small bowl with splayed-out rim, straight neck and carinated shoulder.
4. Deep bowl with a flaring rim, almost straight neck and carinated shoulder.
5. Bowl with a flaring rim and convex sides having a groove.
6. Bowl with a long splayed-out sharpened rim and convex sides.
7. Bowl with a splayed-out rim and convex body.
8. Bowl with a beaked rim.
9. Bowl with a thick oblique-cut rim grooved externally.
10. Bowl with a very small splayed-out rim and sides grooved internally.
11. Deeper dish with an inturned rim and carinated shoulder.
12. Dish with a sharpened and internally oblique-cut rim and blunt-carinated shoulder.
13. Deep bowl with a sharpened rim, corrugation on the sides narrowing down towards the base.
14. Dish with an internally oblique-cut rim and sides grooved internally.

3. MASKI

Simple varieties of vase and bowl, occasionally carrying graffiti marks are found at Maski. The shapes are described below (Fig. 67, nos. 1 and 2 and fig. 68) :

1. Bowl with a straight-edged rim and sagger base.
2. Bowl with a featureless rim and sagger base.
3. Vase with a flattened rim, oblique neck and blunt-carinated shoulder.

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4. Vase with a splayed-out rim and globular body.
5. Bowl with a beaked flattened rim, carinated shoulder and sagger base.
6. Bowl with a splayed-out rim, oblique neck, carinated shoulder and sagger base. Graffiti marks both internally and externally.
7. A ring-footed bowl with a very small beaked rim.

4. AMRITHAMANGALAM

The following are the main types (Fig. 69, nos. 1 and 2) :

1. Vase with an externally oblique-cut rim, broad straight neck and sagger base.
2. Bowl with an incurved thickened rim, corrugated convex sides and flat base.

5. PORKALAM

Elongation in the vessels is quite prominent amongst the vessels at Porkalam. The types are as follows (Fig. 69, nos. 3 to 6 and fig. 70, nos. 7 to 9) :

3. A lid.
4. Bowl with a straight-edged rim.
5. Deep bowl with an incurved rim and flat base.
6. Vase with an everted flattened rim and globular body.
7. Vase with a splayed-out oblique-cut rim, blunt-carinated shoulder and sides narrowing down towards a sagger base.
8. Deep bowl with tapering sides and sagger base.
9. Bowl with a sharpened rim, sides smoothly narrowing down towards a flat base.

6. BRAHMAGIRI (Plate XIIb)

There is a clear-cut distinction between the pre-Megalithic Black-and-Red Ware and the Megalithic ones. The former is elongated, whereas the latter is restricted to simple bowls smaller in size.

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The following are the main types (Fig. 70, nos. 10 to 13 and figs. 71 & 72) :

10. Deep bowl with a beaded rim and grooved carinated shoulder.
11. Small bowl with an internally oblique-cut rim and straight sides.
12. Bowl with a straight-edged rim and carinated shoulder.
13. Small bowl with a splayed-out rim and grooved sides.
14. Vase with a flattened rim and carinated shoulder.
15. Bowl with an incurved pointed rim and corrugated sides.
16. Vase with a long flaring rim and globular body.
17. Bowl with a beaded rim, grooved sides and flat base.
18. Bowl with a flattened beaded rim and sharp-carinated shoulder.
19. Vase with a small splayed-out rim and blunt-carinated sides.
20. Vase with a splayed-out rim and globular body.
21. Deep dish with an incurved thickened rim and carinated shoulder.
22. A variant of 20.
23. Bowl with a sharpened rim, almost straight sides and flat base.
24. Bowl with an incurved rim and sagger base.
25. Bowl with flaring beaded rim and smooth convex sides.

7. HALLUR

The Black-and-Red Ware at Hallur is well burnished and polished. It is made of fine paste and exhibits a thin section. Bowl happened to be the predominant type. The conical bowl and lid were also known. The painting on the Black-and-Red Ware was executed in white in post-firing stage. The painted designs comprising mainly groups of six or seven lines are very faint and not immediately visible to the eyes.

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The following are the main shapes (Figs. 73 to 76) :

Painted Variety

1. Bowl with concave sides, everted thickened rim, blunt-carinated shoulder and a rounded base, painted internally in five oblique lines.
2. Deep bowl with a flaring grooved rim, blunt-carinated shoulder and sagger base, painted internally in groups of five strokes and lines.
3. Bowl with a beaded rim and blunt-carinated shoulder, painted internally in groups of small lines.
4. Bowl with a beaked rim and blunt-carinated shoulder, painted internally in groups of wavy and oblique lines and externally in groups of five oblique strokes.
5. Vase with a flaring beaded rim, painted externally in group of seven oblique strokes.
6. Shoulder fragment of a tulip-shaped bowl with a ledge on the exterior, painted internally in groups of vertical and oblique lines.
7. Basin with an oblique-cut flattened rim, painted internally in group of nine bands.
8. Deep basin with a flattened beaded rim, painted internally in group of oblique bands.
9. Bowl with almost straight sides and carinated shoulder, painted both internally and externally in groups of oblique lines in opposite directions.
10. A conical deep bowl or lid with oblique sides, painted externally in four strokes at the edge of lines making the pattern of a spoke of a wheel.
11. A deeper variety of no. 10, painted externally in groups of seven oblique strokes drawn in opposite directions.
12. A globular vase with a concave neck and thickened beaded rim, painted externally in groups of oblique bands.
13. Fragment of a thick vessel, painted internally in group of circular lines.
14. Fragment of a vessel, painted in a group of eight vertical bands.

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Unpainted Variety (Figs. 75 and 76) :

1. Bowl with a concave neck, carinated shoulder and rounded bottom.
2. Bowl with a splayed-out rim, blunt-carinated shoulder and rounded bottom.
3. Almost similar to type no. 2.
4. Another variant of type no. 2.
5. A wide-mouthed bowl with splayed-out rim and rounded bottom.
6. A deep bowl with everted rim, concave neck, ledged shoulder and sides narrowing down towards a small flat base.
7. A deep bowl with out-turned rim, almost straight neck and a ledged shoulder.
8. A wide-mouthed bowl with a beaked rim and blunt-carinated shoulder.
9. A wide-mouthed shallow bowl with a beaded rim and carinated shoulder.
10. A deep bowl with a splayed-out rim and carinated shoulder.
11. Bowl with a beaded rim.
12. Bowl with a grooved everted rim, straight sides and blunt-carinated shoulder.
13. Bowl with an everted rim and rounded body.
14. Shallow bowl with a beaded rim.
15. Bowl with a flattened rim and almost straight sides.
16. A wide-mouthed bowl with a beaded rim. The rim is pinched to give the shape of a channel-spout.
17. A conical funnel-shaped bowl with a splayed-out rim and carinated shoulder.
18. Base of a funnel-shaped bowl.
19. Rounded bottom of a bowl.

For the purpose of closer and detailed study of the shapes, attempt has been made to illustrate them in the book on the same scale as far as possible. They have been presented in half size of the original. The shapes of the Black-and-Red Ware from a large number of sites in India described above may reveal some similarities,

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but a comparative study in detail makes the dissimilarities in the shapes and fabric appear so striking that the importance of the resemblances is completely lost sight of. There is a great variation in size as well. It can be observed that the Harappan sites in Gujarat yielded simple types of bowl with incurved or slightly everted rim. A new variety, unknown from any part of India, was found in the stud-handled bowl. These types are fundamentally different from those found at Ahar in South-eastern Rajasthan. At Ahar the bowls from early levels is beaded below the rim, which is sometimes prominently everted. A flange occurs below the rim in case it is not beaded. The specimens from Ahar depict a large number of painted designs, when the same is restricted to dots, strokes and semi-circles at Harappan sites in Gujarat. Both the surfaces of the vessels *i.e.*, exterior and interior happen to be painted at Ahar, whereas in Gujarat it is generally restricted to the interior only. The imagination of a painted zone at Ahar is unique. Intricate designs like lozenges juxtaposed to each other with spirals in between, though introduced in the later levels of Period IA of Ahar, are completely unknown at Lothal and Rangpur. The ancient site of Desalpur has yielded only dishes and bowls having blunt carination at the shoulder. The painting has been executed in grey oblique slashes on the interior rim. Though the excavator of Desalpur is of the opinion that the painted Black-and-Red Ware, showing typical obique slashes on the interior rim, are analogous to specimens from Period IB of Ahar, there is no valid reason to justify it. The Black-and-Red Ware from Surkotada has its own distinctive features. Bowls with an everted rim and convex sides are the dominant type. Some of the bowls are having carination at the shoulder. Basins with short-thickened rims and a few stud-handled bowls have also been reported. The designs in painting are much more varied than Lothal, though the same was executed only on the interior. They comprised vertical strokes and lines in groups, vertical wavy lines, concentric circles, arcs joined to horizontal band and intersecting criss-cross lines. Painted variety of Black-and-Red Ware is conspicuous by its absence at Malvan and a number of other sites in the region. In

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the beginning, a wide range of similarity was observed between the Black-and-Red Ware from Rangpur and Ahar, but later on when the vessels from the two sites were drawn on the same scale, it was observed that the Rangpur bowls were bigger and deeper with large vertical sides, whereas at Ahar they are smaller and more convex. The dissimilarities are much more marked if the Black-and-Red Ware from Navdatoli is compared with those from Rangpur. The Black-and-Red Ware reported from Navdatoli is black or grey on the interior and slightly reddish below the rim on the exterior, whereas at Rangpur in Periods IIC and III the exterior of the vessel is lustrous red and the interior black surface is shining. In Periods IIC and III, the bowls at Rangpur are almost always carinated and deep.

An independent identity of the Black-and-Red Ware cannot be established at most of the sites in India, wherefrom the ceramic has been reported. The Black-and-Red Ware generally imitates the shapes produced in other ceramics of the site. Though the Black-and-Red Ware can be considered at home at Ahar in South-eastern Rajasthan, even there identical shapes have been produced in the red Ware.

Before comparing the types of one region with the other, it may be pointed out that the Black-and-Red Ware has its own individual characteristics even at the sites within the same zone. Hence, any attempt to establish all round similarities between two regions would be of no avail. As already indicated in the case of Black-and-Red Ware from Gujarat, if the types from various sites in Region B are compared with each other, the dissimilarities are bound to outweigh the similarities. While at Ahar the ceramic holds a dominant position, at other sites it has been relegated to a subordinate position. The similarities between Ahar and Navdatoli are limited to carinated bowl (149) of Ahar IC with 47 of Phase III at Navdatoli; type 10 of Phase IA of Ahar with 49 of Phase III at Navdatoli. The latter is a bowl with flaring sides. The similarities in painted design are also limited viz., double row of dotted zigzags and chevrons. The limited similarities will loose its weight completely, if the Black-and-Red Ware from Eran is taken into consideration. The dishes from

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Eran, in which the black is restricted to the interior only, has not been reported from any other site in India.

The position of the dissimilarities maintaining an upper hand over the limited range of similarities does not call for any modification in other parts of the country. Chirand in District Saran is the most important site in Region C from where a substantial quantity of painted Black-and-Red Ware has been reported. The main shapes are dish-on-stand, long-necked jar, bowl, lipped bowl, basin, trough, vase and *lota*. Majority of these types, if not all, are in fact unknown in other regions of the country. The tradition of painting also has its own individual line of designing. In certain cases the Black-and-Red Ware from Chirand carries painting in cream over a red surface, a feature not reported so far from any other site in India. The unique position of Eran in Region B for dissimilarities in the same region is repeated at Sonpur in Region C. Painting on the Black-and-Red Ware had no place at Sonpur. According to the excavator of both the sites, there is a vast difference in the pottery types of Chirand and Sonpur. He said, "Types like dish-on-stand, footed bowl, spout, jug, *lota* etc. are absent at Sonpur whereas at Chirand they have been found in good number".[1] Ornamentation by way of painting the Black-and-Red Ware, no doubt occurs at other sites like Kausambi, Rajghat and Sohgaura, the patterns are too simple as compared to those at Chirand. The other paramount difference is the quantity, which is negligible at Kausambi, Rajghat and Sohgaura. Pandu-Rajar-Dhibi has also not yielded appreciable quantity of Black-and-Red Ware, but the painted designs are not as simple as at the other three above mentioned sites.

Region D, the region of the Painted Grey Ware people, again, has its own characteristics which are unknown in other parts. In the first instance the Black-and-Red Ware of this region is devoid of any painting. The scholars are at a loss to account for any tangible reason for the absence of painting, particularly when the shapes in the Black-and-Red Ware closely follow those in the Painted Grey Ware. The absence of painting is further surprising when it is so

1. Potteries in Ancient India, ed. B.P. Sinha, Patna, p. 104.

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popular in all the adjoining regions. On the one hand, the Black-and-Red Ware did not carry any ornamentation, whereas on the other, the people using it were so fastidious as to carefully demarcate the black portion on the upper part of the exterior, which makes a perfect horizontal line. In other regions, where paintings exist, the inhabitants were careless in so far as the demarcation of the black area on the exterior is concerned. Can such fundamental differences be justified, if it is said that the authors of the Black-and-Red Ware in all the regions or parts of the country were one and the same group of people.

Once the attention is turned to Region E, another set of distinguishing features is encountered. The elongation of the vessels is a feature characteristic to this region, repeated again to a considerable extent in Region F. Prakash and Bahal, two important sites of the region, are not located too far from each other, but the Black-and-Red Ware from both the sites has hardly any resemblance. The Black-and-Red Ware from Prakash is greyish in texture on the exterior, whereas at Bahal it is red. A number of vases has been excavated from Prakash, though they are altogether absent from Bahal. A wide variation in the pattern of painting is also distinctly marked. If two sites like Inamgaon and Theur located not very far from each other have displayed such a wide range of uncommon features, the same should not be a source of surprise in the case of other sites far away from each other.

The tradition of painting is not popular at the Megalithic sites of South India. In the beginning it was believed that the painted variety of the Black-and-Red Ware was not known to the Megalithic builders, though of course, a few painted sherds from Perumbiar and Madura were exhibited in the Madras Museum. A typical cup of early Black-and-Red Ware with white painted designs was reported by Allchin from the earlier excavation at Maski. White-painted Black-and-Red Ware was also noticed at T. Kallupatti in Madurai District of Tamil Nadu. The ancient site of Adichanallur also yielded the painted variety. Sangankallu and Hallur are the recently

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excavated sites, where the painted variety of the Black-and-Red Ware has been encountered.

Though the Black-and-Red Ware was generally used as funerary goods in the Megalithic burials under the firm belief of life after death, the painted variety had already made a *locus standi.* In fact better objects in the form of ornamented specimens should have been preferred in place of simple ones for placing them by the side of the dead, as it has been noted in the case of the Harappan burials.

Vases of Black-and-Red Ware occurring frequently in Region E are absent from the Megalithic burials. The wide differences in the Black-and-Red Ware can be accounted for by only one sound reason that, the authors were not one and the same group of people migrating from one region to the other. The conclusion will be further supported by a comparative study of Black-and-Red Ware from two Megalithic sites in South India viz., Porkalam and Brahmagiri, both in Region F. Rudimentary types like the bowl and dish (types 4-9) are somewhat similar to those at Brahmagiri. Salt glazing, a normal feature at Porkalam is completely absent at Brahmagiri, although the same technique can be noticed on the Megalithic pottery at the town site of Chandravalli. Ring stands, so common at Porkalam, are absent at Brahmagiri. The lid found at Brahmagiri has a ring terminal, whereas at Porkalam it is flat on the top. The vase is only three-legged at the former site, whereas it is four-legged at the latter. A broad similarity between types 10, 11 and 12 (in published report) from Porkalam and those found in Cists V and VI at Brahmagiri, can, however, be not ruled out.

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VI

Comparative Study of Other Remains

STRUCTURES

Though the comparative study of the shapes and the painted designs on the Black-and-Red Ware is adequate enough to justify the rejection of the theory of any particular community moving from one region to the other, yet to present a complete picture, it is essential to deal with other cultural accompaniments as well. At urban sites in the Harappan region, the towns and the houses followed a well laid out plan. The houses were in a row alongside the streets. The streets and lanes met each other at right angles. Houses of a set pattern were divided into different blocks, which were separated from each other by means of narrow passages. The houses were built of burnt- or mud-brick over massive mud-brick platforms. The floor of the bath rooms was paved with bricks. The industrial area was placed in a locality other than the residential area. Besides the common structures, the acropolis and a dockyard at Lothal reflected the advanced knowledge of the Harappans. The Harappans were so much conscious of sanitation that each house was provided with a private drain which discharged the refuse in the long public drain. A clay rampart is also a distinguishing feature. Amongst other structures, mention may be made of enclosures for rituals like fire worship, furnaces, pottery kiln, workshops and houses of metal, bone and shell workers. Similar to the picture available these days, the economic poverty of the villages is well marked in the remains of the ancient sites as well. In sharp contrast to the urban site of Lothal, the houses at Rangpur were only of mud-bricks, burnt-bricks having been used only in the flooring of bath rooms and

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in the drains. The lay-out of the houses is not well-planned. Houses in certain parts of the site were constructed on solid platform of mud, though as a matter of routine the settlement was over deposits of silt. Enclosures for ritualistic purpose like Lothal were noticed at Rangpur as well. The floors were made of rammed earth.

At Rojdi the structures were of rubble and mud and the floors were made of lime and rammed-earth. A 2-ft. high mud platform capped by rammed earth and lime for the purpose of constructing houses over it was also exposed. An altogether new feature was observed in the protection wall of large boulders. But for a rubble pavement, no structure came to light during the course of excavation at Somnath. At Malvan mud-bricks were used in a very limited number of structures. Wattle and daub houses were much more popular. Like Rojdi, stone rubble fortification was noticed at Surkotada as well. The ancient site of Desalpur exhibited a new characteristic in the fortification wall. The stone fortification wall had a filling of mud-bricks. Houses of mud-brick and rubble walls were also exposed. Fine brown clay or black soil were used in the floors at Nagal.

So far as the study of the settlements of Black-and-Red Ware in Region B is concerned, Ahar happens to be the most important site. According to the excavator, it was a riverine settlement. The houses were generally made of mud walls, in the foundation and plinth of which, schist stones were used. The mud walls were probably plastered with cow-dung. In a number of cases quartz nodules were inserted in the mud walls to beautify them. The roof of the houses, it is presumed, was laid on bamboo and wattles. In contrast to the burnt-brick covered drains at Harappan sites, soak wells were in use at Ahar. Gilund, a Black-and-Red Ware settlement in the same valley of Banas, presents an altogether different picture of structures. Kiln-burnt bricks with reddish thick plaster were used by the Black-and-Red Ware people. A massive mud-brick structure was also excavated, though the purpose of the same remains still to be establised. Remains of mud-brick structures over stone-rubble foundation, like Ahar, were also available. Indications of the nature

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of superstructure were found in charred remains of wooden posts and chunks of rammed reddish clay with upper surface plain and under surface carrying reed impressions. At Navdatoli the walls appeared to have been raised with the help of closely laid series of wooden or bamboo posts. The walls were plastered on both sides with mud. Samples of post-holes and burnt lump of clay, bearing impressions of the screens and posts, served as a basis for presuming the type of structures. Bamboo or wooden screens were also provided between two principal layers of mud in order to strengthen the walls. The houses of the inhabitants at Navdatoli had in all likelihood a flat roof in which clay, bamboo-matting, grass and wooden posts were used. The ceilings were occasionally whitewashed or plastered with a thin coating of lime. Structural activity, in the form of silos dug into the natural soil and used probably as refuse pits, was reported from the earliest levels of Navdatoli. At Kayatha the walls were made either of mud mixed with husk or with the help of wooden and bamboo frames, which were covered up with husk-mixed clay. The roof was supported on one beam against which framework of bamboos set crosswise and covered with dried plants and yellow clay was set. The floors were made up of burnt lump of clay. But for the mud rampart, structural evidence from Eran is scarce. Rammed yellow clay mixed with *kankar* was used in the floor. Structural remains at Avra were also insignificant. The floors were made of rammed clay and gravel. A massive mud-brick wall has been reported from Manoti, besides defence wall and raised platform of sun-dried bricks. The houses at Nagda were either of mud or mud bricks.

Very scanty evidence is available on the type of structures from Region C, though the rampart at Kausambi is remarkable for its architectural magnificence. It brings back to the mind certain distinguishing features of the rampart wall at Harappa. The ancient site of Chirand, no doubt, is very rich in various types of antiquities, but so far as the structural remains are concerned, it is very poor. The houses were probably of mud and bamboos as revealed by the thick chunks of rammed reddish earth bearing impression of reeds and

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bamboos on one side. Walls were plastered with mud. The evidence from Sonpur is similar. The inhabitants at Pandu-Rajar-Dhibi made their settlement on made-up sandy silt. Reed screens, plastered over with clay, were used in the construction of the houses, as established by the remains of lumps of clay bearing impressions of the reed. Burnt clay tiles probably served as the covering material for the roof. The floors were either smooth lime-plastered or of beaten pellety-laterite. A pier-like construction paved with terracotta nodules washed with lime and showing a ramp or staircase was a unique structure. At Mahisdal the structures were almost of the same type. They comprised simple huts in which plastered reed was used. Beaten earth strengthened with a soling of rammed terracotta was the characteristic of the floors.

Region D, of course very fertile, has yielded very insignificant material for attempting to assess the nature of structures at the ancient sites, wherefrom Black-and-Red Ware has been reported.

The structural evidence, from the ancient sites in Region E, hardly exhibits any difference from those in Region B, but it must be reiterated that each and every site has its own characteristics. The building materials at Chandoli were clay or mud, hay, bamboo, wood, lime, burnt bebris of earlier structures and hydraulic lime. The huts and mud walls were supported with a bamboo screen, which was further strengthened by wooden posts. In addition to bamboo screens, clay mixed with hay was also used. The roof was provided with bamboo matting, which was plastered with clay. Very little evidence was available for ascertaining the nature of floors. They were probably rammed with the gritty burnt clods of clay, which were part of the debris of earlier structures. A few circular raised platforms were also noticed. Burnt clods of clay, bearing impressions of reed, revealed that the structures at Inamgaon were made of reed screens plastered over with mud. The floors were plastered with clay solution. Mud, wattle and daub were the building materials used at the site. Stone was used in the formation of circles around the habitation area. Well-rammed *murum* often plastered over with mud was used in the floors.

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But for the stone rubbles used in the preparation of Megalithic burials, there is hardly any evidence on the materials, which were used for raising the structures in Region F. Granite boulders in the shape of a semi-circle were observed at Kesarpalle, but their use in the periphery of a house was not certain. Burnt daub with split-bamboo impression was also available. The floors were well plastered with lime. The houses at Megalithic sites were generally in the form of circular huts made of wooden posts and bamboo screen.

METAL OBJECTS

Metal objects, excavated from the Black-and-Red Ware sites in India, also display wide variation. A large variety of objects made of gold, copper, bronze and silver have been reported from Lothal. As usual, gold was used in the fashioning of ornaments, which comprised pendants, ear pendants, ear rings, ear ornament, nose ring, finger ring, beads of a necklace, micro-beads, disc beads with double axial hole and beads bordered with gold. Bangles, finger ring, earring, ear ornament, hair pin, bead and amulet with bull figure constituted the objects for ornamentation in copper or bronze. For toilet purposes mirror was also used. Vessel, needle and pin, knife and razor were amongst the articles of personal use. Tools and weapons found were in the shape of arrow-head, spear-head, dagger, axe, celt, chisel, drill and saw. The other objects in copper or bronze were fish hook, rod, figurines of dog, swan, and hare, dancing female figure and seal. Silver was used rarely and the object made out of it was bangle. Inspite of the fact that Rangpur is a rural site, the objects of ornamentation were not very poor. Beads and necklaces of gold were common in use. In addition, gold was also used in filling a cylindrical object and dusting steatite ornament of floral design. Copper or bronze was widely used in shaping other objects like bangles, rings, beads, amulets, celts, knives, pin, needle etc. An ear ornament was the only object in gold from Rojdi. Chisel, rod and bangle were the objects in copper. Bronze celt was used at Somnath. Malvan yielded only bangle and rod of copper or bronze. A beautiful ornament of gold with exquisite filigree work was reported from Lakhabaval. It was either used as ear ring or a head ornament. In the limited excavation at Bhagatrav,

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copper objects of indeterminate shape were collected. Copper axe or celt, ring-like anklet or armlet, probably for a child, bangle and ring were found at Jokha. A silver piece of irregular circular shape was the only valuable object from Nagal. Copper rings and beads were some of the other objects. Copper knives, chisels, rods, rings and seals comprised the restricted objects of metal from Desalpur.

Metal objects were scarce in Region B. In view of the fact that copper is available in plenty near the ancient site of Ahar, copper objects found during the course of excavation were poor. They are restricted to five copper celts, bangles and kohl-sticks. Gilund was still poorer and beyond a few bits of copper nothing was reported. It may be due to the excavation on a limited scale. Navdatoli happened to be richer in metal objects of different variety. The precious metal of gold was confined to a leaf. A wire in lead was also reported, but the bulk was formed by the copper objects, which comprised sword or dagger, arrow-head, celt or axes (also shouldered), fish hook, chisel, nail, nail parer, point-cum-engraver, poker, pointed rod, bead, ring and bangle. Eran yielded only a few objects of copper, which included a small piece, a circular object, a small fragment of celt and a bigger celt from the mud defence wall. A small copper or bronze celt was the only object from Avra. Copper was used in a very restricted quantity at Nagda.

The quantity of metal objects at the sites in Region C is much more less. At Chirand, only small pieces of copper have been found. A copper wire has been reported from Sonpur. Pandu-Rajar-Dhibi has yielded a limited variety of copper objects like fish-hook, nail parer, bangles, ring, eye-pencil and bead. A flat copper celt with a convex cutting edge has been excavated from Mahisdal. In contrast to these sites, Rajghat has yielded only iron objects. In Region D both copper and iron occur together in a very restricted quantity. The number of finished objects is insignificant.

Though the representation of metal objects is not prolific in Region E, yet it can not be considered to be insignificant. Dagger with an antennae, celt or axe, chisel, fish hook, rod, bangle, ring,

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necklace and anklet are the various types of copper objects excavated from the ancient site of Chandoli. Inamgaon has also yielded a substantial quantity of copper objects in the form of copper pan, poker, tong, fish hook and bangle. A gold bead has also been found at Inamgaon. The copper objects from Tekkalkota are not very much different from Inamgaon. They are nail head, fish hook, poker, spiral, ring and bangle. No finished metal object has been reported from Prakash. It yielded only shapeless bits of copper.

A marked difference in the metal objects from Region F strikes the eye at the very first glance. The metal of copper is relegated to a subordinate position and iron objects gain an upper hand. Besides household good, a large variety of iron implements in the form of sickle, dagger, arrow-head etc., has been unearthed from the Megalithic sites of South India. The iron implements were generally placed in the Megalithic burials as funerary goods.

Microliths

The occupational deposit at Lothal was divided into two main Periods, of which the earlier one happened to represent mature Harappa Culture. In the subsequent Period the advanced culture could not maintain its high standard and days of decline set in. In the earlier Period, the well known ribbon flake blades of chert were used, but in the days of adverse circumstances represented by the succeeding Period, the inhabitants, according to the excavator, could not import the material of chert. They depended on the materials available at the nearby places and produced tools of jasper and agate. Nevertheless, the types of tool went up. The sequence of chert blades and tools of jasper and agate is repeated at Rangpur. In Periods IIA and IIB, only chert blades were found, whereas in IIC and III, various types of tool like blades, scrapers, points, borer etc., in jasper and agate were produced. Rojdi has yielded small blades and other microliths of geometric shape. Blades are the only tool represented at Somnath. The quantity of blades at Malvan was much more. They were produced in various materials like chalcedony, jasper, agate and bloodstone. Chert blades have been reported from Bhagatrav.

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The ancient site of Jokha yielded geometric microliths, scrapers, lunates, triangles, trapeze, points, blades etc. Scrapers of agate and jasper were the limited microliths from Alau. The microliths from Desalpur were not restricted to ribbon flake blades of chert. In addition, almond-shaped points and arrow-tips of chalcedony were also produced.

Microlithic tools were popular enough in Region B. In the earlier excavation at Ahar the quantity was restricted to a couple of microliths. The large scale excavation conducted later on yielded a variety of tools. They were hollow scraper, side scraper, convex-scraper, borer-cum-hollow scraper, borers, fluted cores and blunted-back blade of quartz and chalcedony. Though the tools were picked up from the cultural deposits of IA, IB and IC, the excavator is of the opinion that, they are all Middle Stone Age tools, without having anything to do with the Protohistoric Period of Ahar. The limited excavation at Gilund brought to light a variety of microlithic tools, mainly blades, worked primarily on chalcedony. A short blade industry was reported from Navdatoli. Chalcedony was generally used to manufacture the blades. Carnelian, agate, quartz and jasper were also used sparingly. The blades were represented by different varieties like saw like, straight blunted-back, pen-knife or obliquely blunted. Other microlithic tools included end scrapers, side-and end scrapers, borers, lunates, trapezes, triangles, asymmetrical and symmetrical points. The material used at Kayatha to manufacture the microlithic tools was mostly chalcedony and occasionally agate and carnelian. The tools comprised mainly blades of the crested guiding ridge technique. Parallel-sided, serrated, blunted-back and pen-knife were the different variety of blades. The other microlithic tools included points, lunates and trapeze. Short parallel-sided blades, serrated blades, lunates, points, trapezes, pen-knife blades were the microlithic tool types from Eran. The materials used to manufacture the tools were chalcedony, jasper and agate. Blades of different types like blunted-back, parallel-sided, pen-knife made mainly on chalcedony and rarely on agate and carnelian were reported from Avra. The other tools included the lunates, scrapers, trapezes and arrow-heads.

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Parallel-sided blades made on chalcedony, quartz and carnelian were the main types found at Nagda.

Microliths in a very limited quantity occur at the ancient site of Rajghat in Region D. In the same region at Chirand the microlithic industry was quite rich. The main tool types comprise parallel-sided blades, scrapers, tanged arrow-heads, points and borers. The material is mainly chalcedony. Though microlithic cores and flakes do occur at Sonpur, not a single finished tool has been reported. At Pandu-Rajar-Dhibi, the microliths were represented by point-cum-scraper, scrapers and flakes with crested medial ridge. The industry was slightly different at Mahisdal. It comprised scrapers, lunates and short blades.

The use of microliths was very common in Region E. Parallel-sided blades were found in overwhelming majority at Prakash. The other types included serrated blades, blunted-back blades and pen-knife blades. Amongst other tools, mention may be made of points, lunates, trapezes and irregular utilized flakes. The flakes displayed crested-guiding ridge technique. The meterials used for producing the microliths were chalcedony, agate, carnelian and rock crystal. Bahurupa appeared to be a factory site for manufacturing blades of various varieties. Chalcedony and agate were the principal materials. The ancient site of Chandoli yielded blades, points, borers, triangles, trapezes, lunates and scrapers, mainly in chalcedony, though agate, jasper and carnelian were also made use of. The only tool type available at Theur was parallel-sided blade in a very restricted quantity. Blade industry was common at Inamgaon as well. A large variety of tools has been reported from Tekkalkota. They are parallel-sided blades, straight blunted-back blades, pen knife blades, lunates, trapezes, triangles, scrapers, borers, points, and saw-like blades. Chert, chalcedony and rarely opal were the raw materials used for manufacturing the microliths.

Microliths were not in general use at the Megalithic sites in South India. In fact, they are completely absent from the horizons of the Black-and-Red Ware. Their occurrence in the lowest levels

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of Period II at Maski and Brahmagiri, which are Megalithic, can be accounted for only by survival or overlap with Period I. Though Period I at Kesarpalle has been labelled as Chalcolithic, not a single stone tool was found.

BEADS

Banded agate bead is a distinguishing feature of Harappa Culture at Lothal. Cylindrical and segmented beads of faience and disc steatite beads are the other characteristic bead industry. At Lothal beads of other semi-precious stones like jasper, agate, carnelian, both plain and etched have also been found. In addition beads of gold and copper were in use. One bead of agate had a screw in gold, whereas another of jasper was bordered with gold. Amongst beads of other materials, mention may be made of terracotta, chert, shell, ivory and bone. Micro-beads of steatite were found in thousands. With a poorer economy the yield of beads from Rangpur was bound to be poor. Beads of gold, faience, carnelian, jasper, agate, chalcedony, steatite, ivory and terracotta occurred in Periods IIA and IIB. In Period III the variety disappeared completely and beads were produced mostly of shell and terracotta. Banded agate bead, a characteristic of Harappa Culture, was also encountered at Rojdi. The other materials used for manufacturing the beads were faience and etched carnelian. Ten thousand minute beads of steatite in a pot were reported from Somnath. Beads of paste, steatite and carnelian were the restricted variety at Malvan. Similarly a limited number of beads of faience, carnelian and steatite were found at Bhagatrav. The ancient site of Jokha yielded carnelian, steatite, chert, garnet and agate beads. Faience, paste and terracotta were the materials used for the beads at Desalpur. Paste beads were represented by four varieties viz., segmented, gadrooned, cylindrical and disc.

In Region B, Ahar and Navdatoli are the richest site, so far as the variety of beads is concerned. The large variety at the two sites may be accounted for by the large scale excavation conducted at the two sites. At Ahar beads were made of agate, carnelian, crystal, faience, jasper, lapiz-lazuli, schist, bone, calcite, shell, steatite and

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terracotta. The materials at Navdatoli were agate, amazonite, carnelian, chalcedony, faience, jasper, lazuli, paste, sandstone, shell, steatite, terracotta, bone, coral, gold, opal, quartz, quartzite and slate-stone. Steatite beads of two types viz., micro and tubular happened to be predominant. According to the excavator, quite a fair variety of shapes in faience and steatite is known from the Indus sites in Gujarat, *e.g.* discs, tubes and segmented tubes. The restricted excavation at Gilund yielded beads of agate, chalcedony, steatite and terracotta. Beads of carnelian, agate, malachite, shell and terracotta occurred at Kayatha. Eran was a bead-manufacturing centre, where various varieties of bead in stone, steatite, carnelian, jasper, agate, semi-precious stones, shell, paste and terracotta were produced. Avra is also not poor in beads. It yielded beads of carnelian, agate, lapiz-lazuli, crystal, faience, steatite, glass, conch, bone and terracotta.

The sites in Region C are comparatively poorer in beads. During the course of excavation at Chirand beads of stone, chalcedony, red jasper, agate, soapstone, faience, steatite and terracotta were collected. Sonpur yielded beads of carnelian, soapstone, bone, ivory and terracotta. One bead of copper was also found in Period IB. A tubular bead of copper was also brought to light from Pandu-Rajar-Dhibi. The other beads were made of agate and shell. Semi-precious stones and steatite were the materials used in making beads at Mahisdal.

Following the lines of other cultural equipments, Region D is the poorest in beads. A limited number of carnelian and shell beads occurred at Atranjikhera. Glass beads have been found at Alamgirpur. Sravasti has yielded beads of glass, copper, bone, shell, amethyst, lapiz-lazuli and jasper. Beads of semi-precious stones, including etched carnelian and terracotta, have been reported from Noh.

The position of beads in Region E is better. The ancient site of Chandoli has brought to light beads of agate, carnelian, jasper, steatite, shell, copper and terracotta. The varieties are limited at Prakash with beads made of only carnelian, coral, shell and paste.

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Tekwada is poorer with only beads of carnelian, paste and steatite. The position improves at the sites of Inamgaon, Theur and Tekkalkota, the first one yielding beads of semi-precious stones, ivory and shell, the second beads of jasper, chert, shell and agate and the last beads of carnelian, steatite, glass and green stone.

On the whole the sites in Region F are fairly rich in beads, particularly at the places of Megalithic burials. Tiny white beads of magnesite or dolomite, jasper, gold, steatite and terracotta have been collected from the ancient site of Brahmagiri. Bead industry appears to be flourishing at Maski, which yielded a large variety of beads in quartz, carnelian, chalcedony, agate, jasper, lapiz-lazuli, garnet, coral, shell, glass, paste, gold, horn and terracotta. The ancient site of Jaugada is noted for fine workmanship in beads, for which carnelian, agate, quartz, shell and bone were used. Kesarpalle has yielded only terracotta spacer bead, whereas at Sisupalgarh beads of agate, carnelian and quartz were found.

MISCELLANEOUS OBJECTS

Amongst other objects, terracotta played a vital role. Terracotta objects from Lothal, particularly animal figurines, exhibit the keen observation of the artist. They have been gracefully modelled in a most naturalistic style. Humped and humpless variety of cattles, including a cow, dog, ram, pig and horse were some of the animal figurines made of terracotta. In the case of cattles the dewlap was marked by pinching the clay. The hump and the eyes were shown by applied pellets. Amongst human figurines in terracotta, a male having a protruded belly and a prominent nave is remarkable for its proportion. Another figurine with a bird head and beaked nose has been modelled crudely. A torso of a bearded man has a sharp nose, sunken eyes, bald head and an oblong beard. The eye-sockets have been indicated by depressions. The male figurines are devoid of any ornamentation. Though mother goddesses were so common at the Harappan sites in Indus Valley, they are conspicuous by their absence at Indian sites. The other female figurines at Lothal, however, are noted for their beautiful and proportionate form of expression. They have broad shoulders,

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prominent breasts, narrow waist and well-proportioned limbs. The navel has been marked prominently. The ornamentation on the head has been provided by pinching the clay all around.

Boat models from Lothal are quite interesting. One of them had a sail. A hole in the centre was provided for fixing up the mast. The boats were narrow at one end with a flat or narrow bottom. Gamesmen like disc, marbles, balls etc., were produced generally in terracotta, though shell and ivory were also used in a limited number of cases. Terracotta wheels and cart frames might also have been used as objects of play for the children. Amongst objects of personal use were bangles of clay, silver, copper and shell. The number of terracotta bangles was the largest. Terracotta cakes and balls, it is believed, were used for ritualistic purposes. Crucibles and waffles were used by the goldsmiths.

As in other fields, the rural and poorer character of Rangpur was manifested by other objects. Terracotta objects are limited in number, of which a painted terracotta bull is of great importance. Other pieces of humped and humpless bulls were also available. Two bulls standing in a majestic manner are fairly impressive. The horns of one bull are stretched sideways. Animals like dog and pig were found in Period III at Rangpur. Amongst other miscellaneous objects, mention may be made of toy-cart frames and wheels, both with and without hubs, bird whistles, marbles, ear ornaments, beads, triangular cakes and spindle whorls, all in terracotta. No human figurine came to light. The standard of Desalpur was almost the same with objects like toys, playthings, animal figurines, triangular cakes, gamesmen having ram-head, bangles, beads, cart wheels and frames in terracotta. The other Harappan sites in the region were far more poorer. Rojdi yielded only gamesmen. At Malvan bull, whorls, bangles, beads and cakes of terracotta were represented. A terracotta bull of humpless variety was available at Bhagatrav. Bull's head, ball and beads of terracotta were found at Jokha. Objects from Nagal comprised only terracotta beads.

The ancient remains in Region B do not lag behind too much in the production of terracotta objects, particularly when they are

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compared with the rural sites in Region A. Bull, horse, elephant, ram, large-horned bull and other stylized figures constitute the animal figurines at Ahar. Some of the bulls are unique in their elongated body, high horns and prominent hump. Dice, ear-stud, skin rubber, bangles and beads were objects of common use. Out of four human figurines, one was hand made. One of the female figurines was manufactured in a single mould. Her hands were ornamented with bangles. The arms were stretched down to rest on the thighs. There was a girdle at the waist. The breasts were shown prominently. A necklace of four rows of round beads was observed to be dropping between the breasts and falling down to the level of the girdle. Garment with folds covered the lower part of the body. The bulls at Gilund had a prominent hump and long horns. The legs displayed a pinch technique. A gamesman was having a ram's head. Sling balls and beads were the other objects in terracotta. The tail of the bull at Navdatoli was characteristic of Indus Valley figurines. The terracotta bulls were all hand made. They had a prominent hump, applique tail and slit mouth. Horse was represented by a single specimen. Bird figurines were not very much different from those found at Harappan sites. Featureless handmade bulbous pieces resemble crude proto-type of the fertility or mother goddess figurines. Other objects included wheel, ear ornament, beads, red glazed terracotta beads and skin rubbers. Bulls, both naturalistic and of highly stylized varieties, were manufactured at Kayatha. The stylized ones depicted prominent hump and horns. Some of them were decorated with wavy lines and crescent-shaped marks. Such type of bulls has not been reported from any other site in India. A limited number of human and animal figurines in terracotta was found at Eran. Beads, bangles, a toy-cart wheel and pottery discs were the other objects. They did not have any special characteristics. At Avra painted perforated wheel in terracotta with eight spokes, marked in red, was a special feature. Small pottery discs were also painted in black over a red surface. Animal figurines, beads, balls, flesh rubbers, wheel, ear-pendants, potter's or cloth dyers' stamp were some of the other objects. A very restricted number of animal figurines, beads and wheels was reported from Nagda.

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The cultural equipments at the ancient sites in Region C were very poor. The limited number of objects at Chirand include terracotta beads, mostly ghata-shaped, toys, gamesmen, playthings and cult-figurines. Not a single notable object has been reported from Sonpur. A terracotta torso of human figure in a dancing pose from Pandu-Rajar-Dhibi is quite impressive. A terracotta seal with a star motif, a terracotta stamp seal and a terracotta rosette, encircled by a row of chevrons, were some of the other important objects. A small phallus in terracotta and a few tetrahedral objects are the restricted finds from Mahisdal.

Region D was the poorest, so far as the yield of miscellaneous antiquities is concerned. There is hardly any object from any site which can be mentioned.

The sites in Region E were considerably rich in miscellaneous objects. Prakash has yielded terracotta bull, toy-cart wheel and hones. The tradition of painting the bulls was observed at Chandoli as well. Beads, theriomorphic vessel (bull-shaped bottle), lamps, sharpeners, stoppers, stand and cakes in terracotta were amongst the other objects. Terracotta figurines of bull and toy-cart wheel were reported from Theur. Two male figurines in terracotta, both unbaked with unusual features, were excavated from Inamgaon. A female figurine, which might have been a deity, had stumpy arms and legs, pendant breasts and crudely-shaped head. Tekkalkota happened to be the richest in the yield of other objects, which comprised terracotta torso, hind part of two bulls, lamps, dabber, fragment of a pestle or cake, spindle whorls, beads, wheels, discs and sharpeners.

Like Region D, Region F also happened to be very poor in the yield of miscellaneous antiquities. Terracotta beads and discs and a conical button of steatite were the only objects from Brahmagiri. The position at Maski was slightly better with terracotta beads, gamesmen, stone balls and pestles. An ear-ornament in terracotta has been reported from Sisupalgarh.

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VII

Assessment of Occupational Remains As a Whole

After having described the main types of Black-and-Red Ware and briefly reviewed the main finds associated with them at different sites, it is considered essential to analyse them as a whole to present the correct picture regarding the movement of a particular community in Protohistoric India.

REGION A

Region A constitutes the sites, which either represent the Harappa Culture on all counts or have close relationship with it. These sites are divided into two categories viz., urban and rural. Lothal, and to some extent Surkotada, have brought to light remains of an urban settlement with all civic amenities, whereas other sites like Rangpur, Rojdi, Amra, Lakhabawal and Desalpur are simply village establishments. The only difference amongst the above mentioned sites lies in the degree of advancement achieved by each individual site.

A high standard of living, in almost every walk of life, is reflected at the urban sites. Any visitor is simply astonished to see the planned lay-out of the cities; the main streets running north-south with the cross-roads cutting at right angles. The latter were narrower than the former ones. The lanes, again in a north-south direction, were still narrower. The entire complex of the city was planned with such a great dexterity that residential areas were kept away from the industrial area. The quarters of the workmen were close to the industrial area and not messed up with the residential complex of sophisticated people. Structures of greater importance were built

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over mud-brick platforms. Although mud-bricks were generally used in the construction of houses, the inhabitants were not ignorant of burnt-bricks. They made use of burnt-bricks also in the houses, particularly in the bathrooms and drains, both private and public, which speak of the great consciousness of the inhabitants towards sanitation. Lothal had a dockyard as well made of burnt-bricks.

Pottery happens to be the greatest source of attraction in the household goods. The inhabitants used a characteristic sturdy red ware painted in a variety of impressive designs. The designs were both floral and geometric. Birds, animals, and human figures have also been depicted in a number of cases. The art in terracotta is also of a superb quality. The same vigour, variety and ingenuity are exhibited in the stone sculptures. How advanced was the science of chemistry in those days can be assessed by the bronze and copper objects. The system of weights and measures speaks of the proficiency in accuracy.

Knowledge of reading and writing is attested to by the occurrence of inscription on seals, sealings and pottery. The perfection of skill, with which the animals and the inscriptions on the seals and sealings have been depicted, is unparalleled at such an early date.

The economy of Harappa Culture was based primarily on agriculture, which in turn was supported by trade. Wheat, barley, peas and rice were the staple cereals. Besides cereals, the people consumed vegetables and fruits, fish, fowl, mutton, beef and pork, which were domesticated. Cats and dogs were also domesticated.

The men usually wore *dhoti* and shawl. The ornaments included ear-rings, necklaces, bracelets, girdles, and anklets. Dice was popular as indoor game and hunting of wild animals as an out-door. The children played with hopscotch, marbles, rattles and toys. Beads of great variety were also produced.

On religious side the conception of Siva, *Pasupati* can be gleaned from the three-horned representation of man. A belief in life after death is reflected by the funerary goods placed with the skeletons in the burials.

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So far as the use of the Black-and-Red Ware is concerned, it may be made clear that the ceramic did not constitute as one of the characteristics of the Harappans. It is found only at the Harappan sites in Gujarat. Had it been one of the characteristic features of the Harappans like the dish-on-stand, perforated jar, goblet or the sturdy painted black-on-red ware, the same would have occurred at all the Harappan sites in India. But, the case is entirely different. The ceramic is conspicuous by its absence at the Harappan sites in Sind, Punjab and North-western Rajasthan.

The excavations at Lothal have revealed a very interesting story of the Black-and-Red Ware. The authors of this pottery as also the Micaceous Red Ware were, according to the excavator, probably the original inhabitants of Lothal before the Harappa Culture was developed at the site or the Harappans colonized the place. Rao said, "Different indigenous culture groups occupied the coastal belt of Gujarat before the advent of Harappans. Micaceous Red Ware and the Black-and-Red Ware have been found in the lowest level. . . . It is true that a purely pre-Harappan level is not yet reached at Lothal but Micaceous Red Ware and the Black-and-Red Ware had lived for a considerable time as inferred from 10 feet thick occupational debris below water table, wherein large quantities of Micaceous Red Ware and Harappan Ware in sprinkling have been found."[1] Ghosh also held the same view when he said, "The painted Black-and-Red Ware found in the Harappan levels of Lothal and Rangpur may be remotely connected with similar waves of the Banas Culture. If so, this together with evidence of Rojdi would indicate the incoming of the Harappans. The very recent excavation at Desalpur in Kutch points to the same conclusion".[2] Sharma corroborated the statement and said, "The Black-and-Red Ware of Lothal and Rangpur would, however, seem to be locally manufactured by people already living in Saurashtra before the arrival of the Harappans".[3] The Harappans did not oust the Micaceous Red and Black-and-Red Wares, but

1. Indian Prehistory, Poona, p. 129.
2. *Ibid.*, p. 121.
3. *Ibid.*, p. 134.

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absorbed them. Both the ceramics continued to live with the Harappan pottery in a subordinate position, though not in any way insignificant.

The shapes in the Black-and-Red Ware are restricted mainly to bowls with paintings executed only on the interior surfaces. The shapes undergo a change even at the same site like Rangpur in Periods II and III. Another peculiarity of the Black-and-Red Ware from Harappan sites in Gujarat is the black portion on the exterior surface. It makes almost a perfect straight line. The painted patterns are extremely scarce, limited to strokes and wavy lines. The shapes had no individuality of their own because similar types were produced in other wares in a large quantity.

REGION B

The earliest occupation of the Black-and-Red Ware in this region has been reported from Ahar dated back to 2000 B.C., when the Harappa Culture continued to exist in Gujarat in the well-known advanced state of civilization. Certain similarities between the Harappa Culture in Gujarat and Ahar are very good evidence to prove that the two had contact with each other. The excavations at Rojdi and Desalpur have further established this fact. Dish-on-stand, black-on-red painted ware, painted Black-and-Red and polychrome wares, which are some of the characteristics of the Harappa Culture in Gujarat have been reported from Ahar as well. It is, therefore, not unreasonable to believe that the inhabitants of Ahar had contacts with the Harappans in Gujarat. The contact led the people of Ahar to learn the so-called technique of inverted firing, besides other traits, which they liked and could imitate in their economic condition. They must have been very much impressed by the utility of the vessels having a black interior and red exterior and that is why the technique was not only adopted by them, but they developed the same to such an extent that the ceramic gained an upper hand over all the ceramics in use. Being the chief ceramic industry, the varieties multiplied both in shapes and painting.

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Taking into consideration a limited cases of similarity, it would never be justified to declare that the people, who used the Black-and-Red Ware in the Harappa Culture in Gujarat, migrated to this region. Migration of people is refuted by the simple fact that there is a fundamental difference in the technique followed by the Harappans and those inhabiting Ahar and other sites in the region. The black on the upper part of the exterior rim at the Harappan sites in Gujarat makes a horizontal line, whereas at Ahar the same is irregular. The shapes also in both the region are basically different. The Lustrous Red Ware and the carinated bowl in the Black-and-Red Ware speak that the contact between the Harappans of Gujarat and the people of Ahar continued for more than two centuries.

It is really very surprising to note that the archaeologists are prone to associate the Black-and-Red Ware with a group of people moving from one place to the other without giving the least consideration to the basic economy in which it was found. We are very well conversant about the advanced state of civilization for which the Harappans are famous. The houses and the cities in which they lived were very well planned. The buildings were constructed of standard size bricks, both mud and burnt, in the most modern style. The Harappans were very conscious of sanitation, for which each house was provided with underground drain discharging into public drains. They were very fastidious not only in the construction of their houses, but also the articles of their daily use. All of them were of a very high standard and particular care was taken to manufacture them on a set pattern. The carvings on the seals and sealings, both of the writing and the animal, which were more than often depicted on them, speak of the superb achievements of the Harappans in the field of art.

In the light of the above mentioned achievements of the Harappans, the cultural backwardness of the people of Ahar and other sites in the region is striking to the very first glance of the eyes. The Chalcolithic people at Ahar or in the adjoining region had very poor dwellings made either of mud or wattle and daub without any sense of plan or sanitation. The roof was supported on wooden

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posts and split bamboos were used largely for screens, against which mud was plastered from both sides. The floors were made of gravel mixed with clay. At certain sites like Navdatoli *kankar* was also used in ramming the floors. The objects of daily use were of a very poor standard, which stand nowhere when compared with the Harappans. Copper was so easily available in the neighbourhood of Ahar, but the number and quality of the objects produced are very poor. H.D. Sankalia said in this connection, "These matchless or incomparable natural advantages have bestowed a peculiar character on the Ahar culture (or have given birth to a culture) which was quite different from the Harappan as well as the contemporary Chalcolithic cultures."[1] The specimens of arts and crafts have been recovered in largest number from Navdatoli, but the bronze/copper, bone and ivory objects, beads of various materials, pendants and ear-studs, bangles and rings were indeed too few in relation to the excavated area. They were all manufactured locally.

Sturdy pottery with a rich variety of designs at Harappan sites is completely absent from Ahar. The knowledge of chemistry, so far as the inhabitants of Ahar are concerned, was very poor as compared to Harappans. This is reflected not only in the ceramics produced in the two regions but also in the objects manufactured out of bronze and copper. Sophistication is something of which the people of Ahar were completely ignorant. There is no evidence of trade at Ahar. The food habits were also different. There is no evidence of writing from Ahar or other sites in the region.

If all the facts mentioned above are considered together with the conservative character of Indians, can it be believed that the Black-and-Red Ware users at the Harappan sites in Gujarat and those at Ahar were one and the same people ? Had they been the same people they would not have forgotten everything of their advanced civilization completely.

In this connection the remarks of Wheeler that ideas have wings are very apt. Thapar supported the statement and said, "It must be

1. H.D. Sankalia, Pre-history and Proto-history of India and Pakistan, Poona 1974, p. 404.

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stated that at no stage was the evidence for interconnection reasonably consistent or impressive in bulk to imply a full scale migration. Certain common ideas were transmitted into different environments which resulted into a complex of cultures with varying milieu and yet related to each other by generalized or specific traits."[1]

Eran in District Sagar of Madhya Pradesh is a very interesting site to establish that the manufacturing or the introduction of the Black-and-Red Ware had nothing to do with full scale migration or transmutation of any culture. Though Eran falls very well within the Zone of Region B, both geographically and culturally, it had its own individual characteristics. Eran is the first and probably the only site, so far reported in India, where the black in the Black-and-Red Ware of the Proto-historic Period is restricted to the interior alone. The upper part of the exterior rim, unlike other sites, is all red. The same people migrating from one region to the other will not allow such a fundamental change in the technique. In addition to this basic difference, the Black-and-Red Ware reported from Eran has its own peculiarities. In comparison with other Proto-historic sites in India, the Black-and-Red Ware of Eran is thicker and much more sturdy. Contact with the Harappans of Gujarat directly or through the people of Ahar is certain, because the dish-on-stand, so popular a type of the former has been represented at Eran. Singh expressed, "Although no complete dish-on-stand was found, the thick short stem bearing traces of white paintings over the black top seems to be a part of this variety of pot."[2] The presence of the dish-on-stand in Black-and-Red Ware is a very good evidence to prove that there was no migration of people, but simply contact and borrowing of ideas, because the type is represented only in Red Ware in Gujarat. On the other hand, the painting is found to have been executed on the interior surface only, a characteristic of the Harappans. Other notable differences in the ceramic at Eran, when compared with different sites, are also worth consideration. Most of the dishes and bowls in the Black-and-Red Ware do not have exact parallels in the

1. Indian Prehistory, Poona, p. 162.
2. U.V. Singh, Proto-historic Pottery of Eastern Malwa, Sagar 1966, p. 102.

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contemporary ware at the sites. The painted motifs also, although very simple like group of short verticals, horizontal or oblique bands, dots, combination of the above, comb and plant do not occur on other contemporary wares at the site.

Majumdar also categorically remarked and said, "In the limited earlier dig, as well as in the extensive later excavations only comparatively a small number of sherds was found. This definitely indicated that the vessels in this ware had some specialized function. Hence it was inferred that they were imported from some other region, probably Eastern Rajasthan. This impression is found to be wrong. For when we dug later at Ahar and got large collections of Black-and-Red Ware from this site for a comparative study, it was found that superficially similar both differed in type, shape and surface decoration. Only three types T2 (fig. 307), T15 (fig. 307), T4 (fig. 30), hemispherical bowls and highly carinated bowls recall shapes T. 1 and T. 101 and T. 196a, T. 196e and T. 198 from Ahar. The latter has many more shapes and designs. On the contrary, those at Navdatoli closely follow the shapes in Black-and-Red Ware and exhibit shapes which are not represented at Ahar. Thus we may infer, at best, the local adaptation of a fashion most common in south-east Rajasthan, but nothing more or at most an Aharian potter migrating to Navdatoli and producing local forms in a fabric known to him. This is clearly seen in the bowls which resemble goblets."[1]

Again if the painted designs on the pottery are taken into consideration, it can very obviously be observed that, they are not similar to those on Harappan pottery. Stylized animals on the Harappan pottery are rare, whereas on the painted fragments from Navdatoli they are popular. The animals most commonly shown on the black-on-red painted pottery are the peacock and black buck, domestic ox, goat, dog, deer, pig, tiger and the pantheon, bore, tortoise and three types of insects. Though the number of domestic animals is comparatively small, the painted designs show keen interest in the animals round the settlement. The human form is rare and

1. H.D. Sankalia and others, Chalcolithic Navdatoli, Poona, 1971, pp. 86-87.

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that too in a highly stylized form. A large number of painted designs has no doubt been observed on the pottery at Navdatoli, the same is not true in the case of other Chalcolithic sites in the region, though the Black-and-Red Ware is common to all of them, of course in shapes and patterns individual to each. Commenting on the Black-and-Red Ware from Navdatoli, Sankalia said, "The Black-and-red Ware is a table ware with graceful bowl forms which either imitate those in the Black-on-Red and Cream-slipped Ware or show a parallel development. Similar is the position at Ahar in Eastern Rajasthan, from which the technique alone seems to have been borrowed. This survives in Phase II, and is replaced in Phase III by a simple more utilitarian Black-and-red Ware, consisting of simple water pots, dishes and basins. Anyway this pottery fabric forms a small part in the daily life of Navdatolians. What exactly was its role remains to be determined. Its wide distribution definitely rules it out as a product of distinct social group, though originally in its inception, it might stand for a separate ethnic or regional cultural group".[1]

Inspite of the fact that copper and bronze implements were not scarce at the Harappan sites, the inhabitants continued to make use of lithic implements, particularly blades. The case of Ahar is entirely different. Lithic implements were rare at Ahar, though there was no scarcity of the raw material. The position at other Chalcolithic sites again changed and lithic implements were used alongwith copper and bronze *e.g.* at Kayatha and Navdatoli.

Fortification was a characteristic feature, in one form or the other, at all the Harappan sites. But so far as the Chalcolithic sites in Region B are concerned, Eran is the only site wherefrom it has been reported.

As compared to the elaborate system of the disposal of the dead bodies at Harappan sites, there is hardly any evidence to ascertain the practice of the burial at the Chalcolithic sites in this region. The practice of cremation at the latter sites, in contrast to burial, may not be too off the mark.

1. H.D. Sankalia and others, Chalcolithic Navdatoli, Poona 1971, p. 80.

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While discussing Navdatoli pottery Sankalia said, "The first is that the various fabrics and associated types are not found exclusively in distinct ecological niches. These occur in the debris of each phase in a mixed form. Secondly, several common types are noticed in each fabric. Hence it is not logical to postulate that certain fabrics were used by a particular caste or social or economic or ethnic group, because these exhibit a common need."[1] Sankalia again said, "However, this theory of colonization assumes that : (*i*) the settlers must have come in large numbers which included the women folk, and (*ii*) that there were no indigenous or aboriginal people in the central Narbada valley, who could partly or wholly be the authors of this culture. It is certainly not true and unbelievable that there were no aboriginal or other people in this or other parts of India".[2]

REGION C

The tradition of painting the Black-and-Red Ware in white designs was deep-rooted in South-eastern Rajasthan and the adjoining areas. The Ware was considered to be of great utility there. Through mutual contact the technique was adopted by the people of the Central Ganga Basin and Eastern India which are the geographical limits of Region C. Amongst the important sites in the region, mention may be made of Kausambi in District Allahabad (U.P.), Sohghaura in District Gorakhpur (U.P.), Sonpur in District Gaya (Bihar), Chirand in District Saran (Bihar) and Pandu-Rajar-Dhibi in District Burdwan (West Bengal).

The most remarkable feature of the Black-and-Red Ware at these sites is the painting which is restricted to the inner surface only, though the same was executed on both the surfaces in South-eastern Rajasthan. Another fundamental difference lies in the importance of the Ware. The ceramic held a dominating position in Region B,

1. H.D. Sankalia and others, Chalcolithic Navdatoli, Poona 1971, p. 413.
2. H.D. Sankalia, Prehistory and Proto-history of India and Pakistan, Poona 1974, p. 471.

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whereas in the area covered by Region C, it has been relegated to a subordinate position of being just an associate ceramic industry. A general resemblance in certain shapes may be observed in both the regions, but both have their own distinguishing features, if the ceramic is studied in detail.

The cultural milieu in which the Black-and-Red Ware occurs in this region is entirely different. A large number of arrow-heads in bone, copper and other materials and bone tools of various other kinds from Chirand speak that the source of subsistence for the inhabitants in this region was mainly hunting, though at a later stage, or simultaneously, agriculture was also introduced. The occurrence of the Neolithic axes in later periods at certain sites like Sonpur and Chirand are of a great significance in this context.

There is hardly any evidence to ascertain the materials used for the houses and so is the case with ornaments or other art objects. On the whole, however, it can be said without the least hesitation that the standard of economy was poorer than Ahar and other sites in Region B. If it is so, how far it would be justified to say that the authors of the Black-and-Red Ware, who once formed part of Harappa Culture in Gujarat, migrated from one region to the other. Did they forget even the basic traits ?

Variation in the chronological horizon can also not be ignored. The theory advanced by Agrawal that the Black-and-Red Ware people recoiled from West Bengal on account of dense forest and settled in Bihar and Eastern Uttar Pradesh has no basis, because the date at Chirand is much earlier than Pandu-Rajar-Dhibi.

B.S. Verma aptly remarked, "Even the typological study does not tell us much".[1] He said, "We have no explanation regarding the differences of types in potteries of Bengal and Bihar. The Lustrous Red Ware of Bengal is totally absent in Bihar. Similarly the channel spout, which is found in Bengal, has not been discovered in Bihar in the Chalcolithic context so far. Even in Bihar itself, we have a vast difference in the pottery types of Chirand and Sonpur. Types like dish-on-

1. Potteries in Ancient India ed. by B.P. Sinha, Patna, pp. 103-104.

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stand; footed bowl, spout, jug, *lota* etc., are absent at Sonpur whereas at Chirand they have been found in good number. So it has created another problem which needs solution".[1] The differences in Bengal and Bihar or amongst the sites in Bihar itself should not be a source of confusion to Verma, once he forgets that the authors of the Black-and-Red Ware were one and the same people every where. While discussing the distinguishing features of the site of Eran, it has been made abundantly clear that the sites within the same region even had their own individual characteristics. This is a very good and solid evidence to prove that there was no migration of the Black-and-Red Ware people, as such, from one region to the other or one place to the other. In case of the migration of people, it would be impossible to explain the fundamental differences mentioned above. The only possibility is the contact of the people in Region C with those of Region B. The former liked the Black-and-Red Ware and hence learnt the technique of its manufacturing and produced the same in their own region with certain modifications suited to their own needs. Personal tastes, likings and requirements were responsible for the differences.

REGION D

This region covers practically the whole area where the well-known Painted Grey Ware of the Indo-Gangetic basin occurs. The Black-and-Red Ware is found in a limited quantity in the area, but inspite of that it has its own distinguishing features not observed in other parts of the country. The vessels of the Black-and-Red Ware follow very closely the shapes in the Painted Grey Ware, though the tradition of painting is conspicuous by its absence.

It would be very interesting to recall the observations made by the author during the course of his exploration in South-eastern Rajasthan. The number of sites yielding the Black-and-Red Ware in South-eastern Rajasthan is very large, but it would be far from truth to say that all of them belong to one and the same culture. Banathali in District Jaipur of Rajasthan is a very important site to draw a line

1. Potteries in Ancient India ed. by B.P. Sinha, Patna, pp. 103-104.

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of demarcation between two cultural complexes. The Black-and-Red Ware at all the sites north of Banathali yield altogether different types, which resemble very closely the shapes in the Painted Grey Ware. This distinction is considered to be a very good evidence to prove that the authors of the Black-and-Red Ware in different parts of the country were not one and the same group of people migrating from one place to the other. It is not only the ceramic industry in which variations can be observed, if studied in detail, but also the antiquities which are associated with it. In fact the technique was learnt from the adjoining region and adopted in different ways to suit the tastes of the people inhabiting one site or the other.

The technique of manufacturing the Black-and-Red Ware was acquired by this region from South-eastern Rajasthan. The most important distinguishing feature, which completely refutes the theory of movement of people from one region to other, is the black portion on the upper part of the exterior and painting on it. Unlike South-eastern Rajasthan, in Region D, a specific portion of the exterior rim is black, making a perfect straight line. The vessels also are plain instead of painted. This characteristic brings back to memory the Harappan Black-and-Red Ware from Lothal, Rangpur, Rodji etc., in Gujarat. No doubt, it is very tempting to jump to the conclusion that the technique of producing the Black-and-Red Ware was learnt from the Harappans of Gujarat, yet in the absence of a site, where the last vestiges of the Harappans were encountered with the Black-and-Red Ware in the 12th-11th centuries B.C., it would be ridiculous to make such presumptions. The excavations at Atranjikhera (U.P.), Noh and Jodhpura (Rajasthan) have brought to light certain characteristics of the late Harappan pottery in Period I, but the deposit of the Black-and-Red Ware is sandwiched between Period I and the cultural deposit of Period III represented by the Painted Grey Ware people. There is no overlap between Period I and the Black-and-Red Ware occupation. It would, therefore, be safer to presume that the idea of keeping the black exterior in a horizontal line was the imagination of the people of this region only. In this connection the statement of Satya Prakash Srivastava must be borne in mind.

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He has stated very clearly that, "The black-and-red pottery of Noh is not a slavish imitation of black-and-red from the Harappan sites or the chalcolithic sites at Ahar, Navdatoli etc."[1]

Though the Black-and-Red Ware people of Region B and C had a poor state of economy, the standard was far poorer in Region D. Indo-Gangetic basin was in no way less fertile than South-eastern Rajasthan and means of communication were also better, yet the word of prosperity was unknown to the people of Region D. Had the same people moved from one region to the other, they would have at least maintained the same standard, if not improved upon it, particularly when the environmental condition was far more congenial. Remains of houses were very scarce. A very poor standard was exhibited wherever they have been observed. They are nothing more than mud-plastered reed houses, when they were of mud and stone and in the case of Gilund, burnt-brick, mud-brick and stone in South-eastern Rajasthan. The household goods also were not of the same standard. Iron was known to the Painted Grey Ware people, but objects of daily use in iron were conspicuously absent. Of all, the most important were the food habits, which were entirely different in the two regions.

REGION E

Region E is very interesting to study the inter-relationship between the Chalcolithic Cultures of Western India and the Megalith builders of South India, after whom the Black-and-Red Ware was labelled in the beginning. Tekwada, Prakash and Tekkalkota are some of the important sites which throw a flood of light on the inter-relationship.

Prakash in District Dhulia of Maharashtra exhibits certain characteristics of the Harappans in the pottery of Period I in which the Black-and-Red Ware called by the excavator as Black-and-grey has been represented. It need not be embarrassing to note that certain types and paintings in the red ware are similar to the Harappan

1. Potteries in Ancient India ed. by B.P. Sinha, Patna, p. 40.

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pottery, whereas the Black-and-Red (Black-and-grey) Ware is entirely different. To call Prakash I Culture as Harappan, simply on the similarity of certain types and paintings on them will not be justified at all. Once a culture is called Harappan, the advanced civilization, which was exposed at Harappa, Mohenjodaro, Lothal and Kalibangan, immediately flashes before the mind. It is, therefore, always safe to consider all the aspects together, before assigning any particular cultural label. The similarity in pottery types and paintings on them simply speak of some contact between the inhabitants of Prakash I and Harappans of Gujarat. The former appear to have learnt to produce a red ware of almost the same standard through contact, in case the possibility of an independent development is altogether eliminated. Alongwith the red ware, the people also learnt to manufacture vessels having a black interior and red to grey exterior. The latter ceramic, however, was not accepted without introducing certain modifications of their own. There is not the least similarity between the Black-and-Red Ware found at Prakash in Period I and that of Lothal and Rangpur. Besides the difference in shapes and fabric, the fundamental departure is in the exterior black portion. In case of Prakash I, the exterior is not black but greyish, though there does not appear to be any variation in the technique. Further, the exterior black at Lothal and Rangpur makes a straight line, whereas the same is irregular at Prakash. Painting at the latter site has been executed both on the interior as well as exterior, when the same is restricted to interior only at Lothal and Rangpur.

The Harappa Culture has been considered as one of the three advanced civilizations of the world on account of the high standard of living and prosperous economy. When the economy of the people of Prakash I is compared with the Harappans, the miserably poor standard of the former immediately strikes the eye. The planned houses of burnt-brick and mud-brick, the consciousness regarding sanitation, spoken of by the underground public and individual drains, division of the city into various sectors meant for different purposes, lay-out of the streets and lanes at rigth angles etc., were certain characteristics of the Harappans completely foreign to the Culture of

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Prakash I. Houses at Prakash were made only of mud or wattle and daub. The dexterity and skill with which the art objects were produced by the Harappans were unknown to the people of Prakash I. Objects of daily use were also of a very poor standard. Burials, so elaborate at Harappan sites, have not been noticed at all at Prakash. It is quite likely that the inhabitants of Prakash believed in cremation rather than burial. The occupants of Prakash were completely ignorant of the advanced knowledge of metallurgy possessed by the Harappans. Though microliths were used both by the Harappans and the people of Prakash, the long ribbon-flake blades of the former were totally absent at the latter site. The food habits of the two people also differed. No evidence of trade has been encountered at Prakash.

In view of the comparative study of all aspects mentioned above, there is hardly any basis to proclaim the theory of people as a whole moving from one region to the other. Mutual contact only is responsible for the limited common features observed in different regions. People forgetting their heritage completely is something beyond comprehension, particularly in a country like India, where they are so conservative.

Tekwada, opposite Bahal, in District Jalgaon of Maharashtra is another very important site in the region to establish inter-relationship. Megalithic burials and painted Black-and-Red Ware have been found together at Tekwada in a Chalcolithic context. This is the only site so far excavated in India, where painted Black-and-Red Ware has been reported from the Megalithic burials without the appendage of iron implements, which happened to be so common in funerary goods. The occurrence of both Megalithic burials and painted Black-and-Red Ware in a Chalcolithic horizon goes a long way in establishing the inter-relationship between the Chalcolithic Black-and-Red Ware and the Megalithic burials of South India, in which plain Black-and-Red Ware was one of the chief grave goods. Further, the elongated vessels of the Black-and-Red Ware at Tekwada are characteristic of the Megalithic Black-and-Red Ware particularly the types found in pits adjoining Cists V and VI at

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Brahmagiri. The Black-and-Red Ware vessels unearthed at Prakash also are elongated. Wheeler's confession in this regard that the Black-and-Red Ware vessels found in the pits adjoining Cists V and VI were appreciably earlier than those occurring in the burials is quite valuable. A much earlier beginning of the Black-and-Red Ware is apparent from the confession. It is corroborated by the date of the Black-and-Red Ware at Hallur.

The next important site in the region, which deserves special consideration, is Tekkalkota in District Bellary of Karnataka. It is very interesting to recall the evidence on the Black-and-Red Ware revealed during the course of excavation at the site. The Black-and-Red Ware has been found there in the Neolithic burials. Nagaraja Rao, the excavator of Tekkalkota felt that the function of the Ware was simply funerary. The same impression was formed in the beginning, when the ceramic was first reported from the Megalithic burials. The Black-and-Red Ware, as mentioned above, occurred in Neolithic burials of Period II, which has been dated on C14 determinations to seventeenth century B.C. Painted Black-and-Red Ware has already been reported from the burials at Tekwada in Chalcolithic context. There is hardly any difference between the burials at Tekwada and Tekkalkota. The shapes of the pots also, besides the paintings executed on them, are almost identical. Like the people of Tekwada and Prakash, the inhabitants of Tekkalkota, not only learnt the technique of Black-and-Red Ware, but also tried to imitate the black-on-red painted ware and the parallel-sided blades produced by the crested guiding ridge technique.

Discoveries during the course of exploration undertaken by A. Sundara in the Krishna-Tungabhadra Valley have also a great bearing on the contact of people. He has observed at several sites in the Valley that the Megalithic Culture characterized by the Black-and-Red Ware, iron and rough stone tomb-building practices overlapped with the upper phase of the Neolithic Culture as reported from Brahmagiri and other sites. Further, Sundara has found the Black-and-Red Ware and the painted black-on-red ware at several sites in

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Bijapur District of Karnataka. In certain cases the Black-and-Red Ware is also painted. Elongation of the shapes in the Black-and-Red Ware, a characteristic of Region E, as also in the Megaliths is quite common. Watgal is the most important site discovered by Sundara. Both painted black-on-red ware and Black-and-Red Ware have been reported from the site in large quantity. Two fragments of the latter are painted in white.

It must be emphasised here that the Black-and-Red Ware in the Krishna-Tungabhadra Valley occurs only at those sites which yielded the painted black-on-red ware and is conspicuously absent from other sites yielding the grey ware of the Neolithic complex. This evidence adds further weight to the conclusion that, there must have been simply mutual contact and not mass migration, as generally believed by the archaeologists. The Central Indian and Northern Deccan people acquired the Neolithic grey ware from those occupying Region F and the latter in turn learnt the Black-and-Red Ware as well as the painted black-on-red ware. Quantity and the percentage of different ceramics must also be taken into consideration before concluding that there was a mass migration.

There are a few other sites in Northern Karnataka which go a long way in establishing that the technique of the Black-and-Red Ware was learnt by the Megalithic people of Region F through the Chalcolithic-Neolithic people of Region E. These sites are Hallur and Kunbev in District Dharwar. Both these sites have yielded the painted Black-and-Red Ware as well as Megaliths, features common to Tekwada as well. The characteristic of the elongation of the vessels in the Black-and-Red Ware is repeated at all these sites.

REGION F

The present region, though the last, deserves special treatment, because it was this part of the country, where from the Black-and-Red Ware was reported for the first time and with which the study of the ceramic made its beginning. The region covers almost the entire area of South India, where Megalithic burials were very popular. In intitial stages, it was presumed that the Megalithic builders were the

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author of the Black-and-Red Ware, because the pottery was used in plenty, generally as grave goods. In fact, certain archaeologists gave it the name of funerary vessel. The later discoveries, however, revealed that the Black-and-Red Ware was already in existence before the Megalithic builders appeared on the scene. Wheeler did not probably like to contradict the earlier scholars and as such he did not come out openly with the fact that the industry had a much earlier beginning, though he frankly admitted it while dealing with the pits adjoining Cists V and VI at Brahmagiri. The recent excavations, however, led him to confess a much earlier beginning of the ceramic and that is why he remarked on type 5 from Hallur that, "The occurrence of this type, in definite stratified layers of habitation area at Brahmagiri, provides an important link between them and the Megaliths".[1] With this statement Wheeler indirectly meant that the Black-and-Red Ware at Brahmagiri must be dated as early as the latter half of the second millenium B.C., because the painted Black-and-Red Ware deposits at Hallur were assigned a date of 11th century B.C. These deposits overlap with the Megalithic Black-and-Red Ware. The same conclusion has been derived by the author by a comparative study of the types from Region F and the stratified position in which they occurred.

The similarities between the types of Region E and F have already been pointed out in the preceding pages. Now, the source of these similarities requires consideration. There could be only two possibilities viz. (1) the inhabitants of Region E migrated to Region F and (2) the people of the latter region learnt the technique through social contact and adopted the same according to their own needs. If the economic condition of both the regions is compared, there would hardly be any basis to establish the theory of migration. There are fundamental differences between the two regions. The occupants of Region E had hardly any knowledge of iron, whereas those occupying Region F produced sophisticated iron objects, particularly implements on a large scale. It can also not be said that iron

1. R.E.M. Wheeler, Bulletin of the Deccan College Postgraduate Research Institute, Vol. 23, pp. 59-65.

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was already known in the region before the Black-and-Red Ware people moved there and exploited the metal. In that case iron should have occurred at certain sites in an earlier context than that of the Black-and-Red Ware, but it is not so.

The next fundamental difference lies in the use of stone tools. Microliths of chalcedony and agate are a characteristic feature of Region E, but they are conspicuously absent from the sites in Region F. So far as the economic condition and the customs and habits in both the regions are concerned, the basic difference will be apparent by a cursory glance over the cultural equipments of the two regions.

The Megalithic people believed in life after death and that is why they buried the dead with the objects of general use by the departed man. This practice is unknown in Region E. Though Megaliths have been reported from Tekwada, the iron implements were conspicuously absent from the graves. In this connection it may be pleaded that the people of Tekwada had no knowledge of iron. In that case they should have placed at least one copper implement in the grave, because copper was known to them. The burials at Tekwada are much poorer than the general Megalithic burials in South India. Another argument in favour of migration, which may be presented, is the innovation of iron by the moving people and developing the same to such a great extent that implements of various shapes could be produced. If the migrating people were really so intelligent and advanced, could they not make use of stone rubbles, found in plenty, in the construction of their houses ? They could very well pile them up in a cairn fashion over the graves, but could not utilise them for their houses. Iron would have been very helpful in dressing the stones, if they had the knowledge to do so. The Chalcolithic people of Region E did not generally believe in burial. The children were, no doubt, buried in pots within the premises of the house as reported from Inamgaon.

The Megalithic people generally occupied the area adjacent to the foot of the hillocks, whereas the sites of Region E are all in

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the fertile area with alluvial soil. The source of water for the Megalithic people was a tank or reservoir, whereas the inhabitants of Region E depended for their water supply mainly on rivers.

Fundamental differences can also be observed if the objects of daily use like beads are studied in detail. Similar is the case with the food habits.

Now, the similarity, on the basis of which the theory of the movement of the people is advanced mainly, should also be considered. Certain shapes in the Black-and-Red Ware, no doubt, resemble each other or they may be said to be identical, yet when all the types are considered together, it will be observed that the dissimilarities are far more pronounced than the common features. Deep bowls with elongated bottoms were familiar in both the regions, but in Region E they are the distinguishing feature. Again, in Region F shallower bowls and dishes were more popular. The fabric of the ceramic also had its own regional variation. The Black-and-Red Ware was the dominant ceramic industry in Region F, when it was simply an associated pottery in Region E. The black-on-red painted ware was very well known in Region E, but the same had no importance in Region F. After a careful study and analysis of the Black-and-Red Ware from Porkalam, it has been observed that, but for the technique, there seems to be very little similarity between the Black-and-Red Ware found at Porkalam and Brahmagiri, though both of them are Megalithic sites. The excavator's remarks, therefore, are very cogent. He said, "We have, therefore, different local industries sharing a commonness in pottery fabric and evidently belonging to the same culture-complex but having no specific resemblance between the pottery types of each other. Identity of fabric, particularly supported by some similarities of form, does, however, suggest some interrelationship".[1]

In view of all the details mentioned above, the theory of mass movement of people is not at all convincing. The only possibility

1. B.K. Thapar, Ancient India No. 8, New Delhi, p. 9.

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which must be responsible, for the use of the Black-and-Red Ware in both the regions, is the social contact and individual needs. The people of Region F learnt the technique from those occupying Region E and adopted the same with modifications suited to their own requirements. The inhabitants of Region F were so much impressed by the utilitarian character of the Black-and-Red Ware that, they developed it to such an extent as to give it the privileged position of being the dominant ceramic industry in their use.

The remarks of Glyn Daniel are very pertinent in this connection. He said, "Watson says roundly that 'there can be no question of a complete transfer of any culture to China from the Far West.

"K.G. Chang expresses an even firmer view when he says that practically all archaeologists would unhesitatingly rule out the first alterative on the basis of the available materials, and here the first alternative is the western origin of Chinese village farming. Chang argues strongly for the local origin of incipient agriculture in northern China, and its gradual local development into the Yang Shao villages, and viewing the whole problem of agricultural origins in the Old World, he sees two original centres of farming, one in the Iraq-Iran-Turkey areas, and the other in the Hwang Ho. Chang sees the spread of farming as happening from these two centres along the intervening steppe Zone and from opposite directions, of course, and concludes that there would naturally be scattered contacts. That, he argues, would explain the resemblances in the painted pottery, and could also be responsible for the spread of wheat, sheep and cattles from the West to the East. This again would be an example of stimulus-diffusion, of the diffusion, of ideas of actual knowledge, and of certain cultural traits without the mass migration of people. It seems to me that this view set out by Chang is right and that the increasingly widely held view of the independent origin of Chinese agriculture is also right".[1]

Emphasising the independent origin and borrowing of traits by various cultures he further said, "Chinese Civilization was then,

1. Glyn Daniel, The First Civilization, London 1968, p. 127.

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born in the Yellow River and by local growth there : it does not seem to have had the stimulus diffusion from Sumer for which we agreed in Egypt and the Indus Valley, but it does seem to have *borrowed* some cultural features from the west - and this small list of borrowings probably or almost certainly included the technique of bronze working".[1]

1. Glyn Daniel, The First Civilization, London 1968, p. 134.

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VIII

The Technique

The two colour-effect on one and the same pot of the Black-and-Red Ware have been a source of particular attraction to the archaeologists and any study of the Ware, therefore, will not be complete unless the technique of its manufacturing is described and discussed. Frequent examination of the vessels of the Black-and-Red Ware has been undertaken by different chemists to determine the method by which certain parts of the vessel were rendered black, while the rest was red. In his report on the excavation at Brahmagiri, Wheeler, while commenting on the technique of this particular ceramic, stated, "The black-and-red ware from the Megaliths is generally fine, well-baked, and brightly polished. The clay used gives a fine paste, and sand, quartz, husk or other tampering material is very sparingly used. The pots are wheel-turned seemingly on a slow wheel".[1] He further added "The black-and-red effect is due to inverted firing. The upper portion of the pot is thus in contact with the reducing agents present in the combustible material and turns black whilst the lower portion is exposed to the air and turns red as a result of oxidization".[2] The archaeologists readily accepted the view that, since the pots are placed in an inverted position, the interior and a portion of the exterior at the top turn black owing to firing under reducing condition, whereas the red exterior is because of being exposed to oxidizing condition. No attempt, however, was made to

1. Ancient India, No. 4, Bulletin of the Archaeological Survey of India, New Delhi, p. 208.
2. *Ibid.*

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go into the details of the contents of the pot and analyse the process by which such vessels could be manufactured.

A similar pottery, though very early in date, has been reported from the ancient sites of Egypt and Western Asia. The Black-and-Red Ware in these countries has been described as the 'Black-topped Ware'. The technique adopted in manufacturing such pots was analysed by several eminent chemists and scholars like Flinders Petrie, W.B. Pollard, H.L. Mercer, Mac Iver, C.L. Woolley, W.M. F. Petrie, Plenderleith, A. Lucas etc.

The general contention for the two colour-effect of the pottery is that proposed by Flinders Petrie.[1] He was of the opinion that the black colour is due to black oxide of iron and red colour to red oxide of iron, both formed at the same time from the iron compounds present in the clay, the different effects being produced by the vessel having been fired in an inverted position with the mouth downwards, the rim being buried in the ashes. In this manner, the air supply reaching the mouth and interior of the vessel would be limited, and a reducing action, resulting in the production of black oxide of iron, seems possible. At the same time the air would have free access to the outside of the body of vessel as a result of which red oxide could be formed.

After a detailed examination of the fragment of the Black-topped Ware, W.B. Pollard[2] arrived at certain definite conclusions. He was of the view that the black could not be ferrous oxide, as the formation of such compound in pottery was impossible; nor could it be ferrous silicate, since the same was not black, but bluish grey; it could not be magnetic oxide as well. He further added that although the pots might have contained a very small proportion of reducing gases, chiefly carbon monoxide, it could not have been a reducing one of the kind or to the extent required to reduce red oxide of iron to black oxide. The presence of smoke is not an evidence of a

1. W.M.F. Petrie, Arts and Crafts, p. 130.
2. W.B. Pollard, Cairo Science Journal VI (1912), pp. 72-75.

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reducing atmosphere, as it is generally thought to be. It is simply a sign of the absence of highly oxidizing condition, which is only a negative evidence, whereas a reducing atmosphere means the positive presence of a large proportion of reducing gases. It is rather impossible to believe that the 'black' is the product of the reduction of red oxide to black oxide on account of the very short time (a few minutes only) necessary to produce the blackening and the rapidly falling temperature of the pottery. Pollard's close examination has finally proved that the black is not due to any compound, but it gives good tests for carbon. Hence, the black of the Black-topped Ware is a carbon black that is to say it is a smoke black and not an oxide of iron black, as often stated.

The most significant feature of the black of the Black-topped Ware is that, when the black is scraped off carefully, there is red below. This is a very good evidence to prove that the surface of the pot was originally red and only subsequently covered with black.

There can be only two ways in which such pottery could have been made namely : (1) by the simultaneous production of the red of the body (apart from any wash of red ochre) and the black of the interior and the rim, or (2) by producing the ware wholly red first and then by a secondary operation of blackening the interior and the rim.

The first method was adopted by H.L. Mercer,[1] a pottery manufacturer of Pennsylvania, who in one continuous operation made excellent imitations of the red-bodied Black-topped Ware, which are now in the Pitt Rivers Museum at Oxford. His description of the process is as follows :

"Having made a pot of ferruginous clay which in a clear kiln fire would burn red, I rubbed red ochre diluted in water upon it with the hand when half dry. Immediately polishing the surface by rubbing with the circumference of a blown glass bottle in lieu of a pebble, I next thoroughly dried the pot and then stood it upside down with the rim buried an inch deep in a layer of rather fine white

1. H.L. Mercer in D. Randall Mac Iver and C.L. Woolley, Areika, 1919, p. 17.

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pine saw dust in the centre of which immediately under the vessel I placed a piece of the size of a chestnut. Over the bowl thus arranged I so bent a piece of common wire netting, (meshed at about two inches) as to entirely surround and overreach the pot at a distance from it of about two inches. Both wire and sawdust stood within a circle of about three feet in diameter of loosely piled stones about one foot high. Upon this I threw about a bushel of finely chipped dry rye straw so as to fill the stone circle and entirely cover the bowl and wire. The straw when ignited burnt about three quarters of an hour, leaving the pot when cool a duplicate (even to the waning buff-grey zone below the black) of the original specimen."

A. Lucas[1] at one time thought that some such process might have been practised anciently but he could not conjecture the entire process. Petrie, who first suggested this method, gave no explanation beyond that, the pots were baked mouth downwards with the rims in the ashes. It may be pointed out, too, that in order to bake a large number of pots together with all the rims in the ashes, a considerable area of ground would be required. Ashes, too, are produced only towards the end of the baking, when the smoke is over. Lucas, in addition to a superficial examination of a very large number of museum pieces, carefully examined various other specimens of ancient Egyptian (including Nubian) Black-topped pottery with the following results :

1. The outer surface, except the rims, was red (various shades) and polished. The red in most instances, though there were a few exceptions, was an extremely thin applied coating. Much that is usually regarded as slip is not an applied slip in the true sense of the term. The tops of the vessels were black throughout and polished on both surfaces. In the case of some of the Badarian pots, the black polish had often a grey-sub-metallic appearance strongly suggestive of graphite. The greater part of the substance of the

1. W.M.F. Petrie, Arts and Crafts of Ancient Egypt, 1910, p. 130.

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ware, therefore, was black, and only a comparatively thin layer on part of the outer surface of the body of the vessels was red.

2. When the black part of the ware was heated in a Bunsen flame with free access of air, the black colour entirely disappeared, and the material became reddish or reddish brown throughout, which suggests that the black may have been due to carbon or carbonaceous matter, but does not prove this, since a black colour produced by the reduction of red oxide becomes red again under similar conditions.

3. The powder obtained by scraping the black part of the ware contained tiny particles that were slightly magnetic, the red, except in two instances, was also slightly magnetic, and in several cases it was more magnetic than the black. The magnetic material being a very common constituent of Egyptian clays, it was probably original to the material and had not been produced by any chemical reduction of red oxide during firing.

4. The black gave good tests for carbon, the red gave negative results.

5. The rims would be buried in the ashes produced by the fuel. Fired in this manner, the position of the vessels most exposed to the heat and air, and which in consequence would burn red, would be the outer surfaces except that of the buried rims, while the substance of ware, the inner surfaces, and the buried rims, being protected from the extreme heat and the full air-supply, would become black, not only owing to the carbonization of the organic matter present, but also from the smoke and possibly tarry material from the fuel. This explanation, therefore, accounts for most of the facts in the simplest manner, it accounts for the red outer surface, the black of the body under the red, the black inner surface, the black rim and the carbon found on analysis.

6. The very high polish of the inner surfaces, it is suggested, was produced after firing by rubbing with a pebble or other smooth hard surface, either, with, or more probably without, the use of a

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little oil; and the finer-grained and more plastic the clay used, and the more the surface of the vessel had been smoothed by the wet hand of the potter during making, or polished before firing, and the larger the amount of soot deposited on the surface, the higher would be the final polish. The polish, too, might be enhanced by the use of graphite in certain cases.

Crawford[1] has suggested that the black of the rims was possibly produced as a secondary operation, by placing the pots mouth downwards with the rims buried in chopped straw or similar fine vegetable material while still hot from the furnace, when the rims would be blackened in the same manner as the entire surface of the pots is now blackened in the Sudan and on the Gold Coast.

Gordon Childe,[2] while admitting that the Egyptian Black-topped Ware may have contained free carbon, suggests that the attribution of a grey or black colour in pottery including Egyptian ware, exclusively to carbon is not justified. Childe was led to this conclusion, most probably, by the article written by Lucas in 1929, a brief of which has been given above. Lucas, however, conducted further analysis of the Black-topped Ware and proved with certainty that the black of this as well as black ware is due to carbon. He, in support of his views, further said that the pottery made from grey-burnished clay, without any coating of red-ochre, where there was no red oxide of iron to be reduced, might be blackened by carbon in a manner similar to that of the Egyptian ware.

A summary of the results of the analysis carried out by Lucas[3] is as follows :

The method employed for producing the Black-topped ware consisted of two distinct operations, the first being the making of a red pot (the red of the clay being enhanced in some instances by a wash of red ochre) and the second being the subjecting of the rim

1. Journal of the Anthropological Institute of Great Britain and Ireland, Vol. LIX, 1929, pp. 121-129.
2. Ancient Egyptian Materials and Industries, pp. 377-381.
3. *Ibid.*

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and interior of the pot to the action of dense smoke in order to blacken them. The obvious way of carrying out the operation seemed to be to stand the pots red hot from the fire mouth downwards on the fuel and this method, therefore, was tried. Miniature pots of two different kinds of clay produced from a local potter, who supplied them wet, these were partially dried, coated with a thin wash of red ochre by smearing it on with the fingers, polished with a quartz pebble, thoroughly dried, baked in a small electric muffle furnace, and when red-hot placed mouth downwards on a layer of sawdust (which was the fuel chosen) in which the rim was buried. The result was a red pot with a black rim generally, though not always, a black interior, but the red body at first was almost always badly smoke-stained. In order to avoid this staining, various modifications of the method were tried and eventually it became clear that the exact temperature of the pots was of little importance, provided that they were hot enough to char the fuel and not sufficiently hot to enflame it, and that the principal precaution necessary was to prevent the sawdust giving off smoke from the top, which could be done by manipulating it in such a manner that the smouldering took place entirely beneath the surface so that practically no smoke escaped, which was effected by pressing down the sawdust and covering it up with fresh material, whenever any signs of burning manifested themselves, or better, by covering the sawdust, after the pot had been placed in position, with a thin layer of dry earth or sand.

Another way of avoiding smoke stains on the bodies of the pots is by burying them, direct from the furnace, mouth upwards in sand, leaving only the rims exposed, then covering the rims, while still hot, with sawdust and placing a little sawdust inside the pots. Although this method is very satisfactory in the laboratory, might not be practicable on a larger scale; to bury a large number of red-hot pots upright and very quickly, before they have time to cool, in sand or earth is not easy and in winter the rims of the pots would probably cool so rapidly that they would not be hot enough to char the

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sawdust and, if the ground were wet it would be impossible without cracking the pot.

Gordon Childe, in collaboration with Professor Barger, carried out a few experiments. The specimen used for the experiment was part of the black rim of a red-bodied, black-topped Predynastic pot. This was heated for ten minutes to a dull red heat in a current of oxygen, when the black colour disappeared entirely, giving place to a deep red colour similar to that of the body of the pot. Carbon dioxide was given off, and, therefore, free carbon (due to smoke) was present. When subsequently heated in a reducing atmosphere the red colour disappeared and the sherd became deep black, though a slightly poorer black than it was originally.

The Black-and-Red Ware from different sites in India has not been examined in such a detail as mentioned above. The black glaze on this ware has been analysed by Plenderleith[1], who holds that a black colouring clay has been applied over it in the form of an Alkaline slip, which could act as a flux at high temperatures. Recently Majumdar of the Deccan College, Pune, has studied the technique of firing this ware. A broad outline of the entire process of its manufacturing can be worked out. The pot was made of a well-levigated clay. A dense paste with sparse to medium concentration of vegetable matter and minerals was prepared and thrown on a fast wheel. A uniform, though not thick, coating of slip was applied to the pots and subsequently burnished. Continuous horizontal burnishing sometime produce a very shining lustre. The pots were then fired at a medium temperature. In certain cases the temperature is low even, because the pot crumbles when kept in water for long. Another and more convincing evidence for a medium to low temperature is the darkened unoxidized core. There is considerable difference of opinion among the archaeologists on the crackles which are found on the pots. Some of them feel that the crackles are on account of the salt glazing whereas others believe that the cracks are the result of the vegetable matter and minerals in the clay.

1. H.J. Plenderleith, 1930, MAN, Vol XXX, October No. 138.

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In the conclusion of his examination he said, "To produce the double colour effect in the same pot, some special arrangement must be made. After making such arrangement the pot can acquire dual colour effect by any of the following processes :

(a) Single firing.

(b) Double firing when the pot is fired red first and after subjecting it to special arrangement and refiring it when the part protected by this special arrangement becomes black (Lucas' idea of Egyptian firing technique).

(c) Double firing but this time firing the pot black first and refiring it (with special arrangement) when a portion becomes red.

The special arrangement referred to above consists of covering and maintaining a close contact of carbonaceous material with the inside portion as well as rim portion of the outer surface of the pot.

After this preliminary study, it is felt, that the Megalithic Black-and-Red Ware was more likely to have been made by this third (c above) method, because firstly the black of the Megalithic ware is jet black, secondly, the accidental occurrence of wholly black pot in the same fabric (Funnel shaped pot at Brahmagiri) and thirdly, the occurrence of occasional Black-and-Grey pots in the same context (as at Prakash and Tekwada). This is because the colour becomes jet black when the inside and outside rim area is subjected to reduction twice. Similarly the presence of an isolated wholly black pot indicates that the pots were fired black first and out of the lot, this pot remained to be refired and thus remained entirely black. Occurrence of Black-and-Grey pots also might be due to some unfavourable position or condition of the pot, it could not be completely oxidized to red but remained half-way in the form of grey shade".[1]

The most complicated problem of the Black-and-Red Ware is the technique of its firing, which could produce two-colour effect viz., the upper part of the exterior rim and the interior black, and

1. G.G. Majumdar, Seminar Papers on the Problems of Megaliths in India, Varanasi, 1969.

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the rest red. In order to achieve the desired effect, there is no doubt that the pots were subjected to inverted firing, but by simply keeping the pots mouth downward during the course of firing would not bring out the result. When the pots will be fired upside down, it is only the interior, being unexposed to oxidizing condition, which will be rendered black, whereas the entire exterior, being exposed to oxidizing condition will be red. This process may be applicable in the case of the Black-and-Red Ware from the Chalcolithic levels at Eran in District Sagar of Madhya Pradesh. But Eran is the only site so far reported in India, which has yielded Black-and-Red Ware of such a type, where black is restricted to the interior only. The upper part of the exterior rim, in addition to the interior, is also black at all other sites in India. Even at Eran, the Black-and-Red Ware unearthed from the later levels is of the same pattern and technique. Hence, the firing cannot be so simple as is generally believed by the archaeologists in India.

Since the Black-and-Red Ware found in India is similar to the Black-topped ware from the ancient sites in Egypt and Western Asia, the technique of firing must also be more or less the same. Though the first method adopted by Lucas, as described earlier, appears to be quite convincing, it is far from practicable. Placing of red-hot pots mouth downwards on a layer of sawdust and burying the rim in it might be practicable in a laboratory, but it is not possible when the pots are to be manufactured on a large scale. The margin of time for placing the pots mouth downwards, once they are fired red-hot is very little in view of the rapidly falling temperature. Besides that, it is not possible to place so many pots upside down simultaneously within the limited time.

The process of firing the pots in an inverted position with the rims buried in sawdust and covered by earth, sand or clay also does not appear to be practicable, because in that case a very large area will be required to fire the pots. The technique of double firing as proposed by Majumdar too, is not very convincing. Subjecting the same pot to double firing may be possible in a laboratory and that also in a limited number of cases, but the same may not be possible

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when the pots are to be produced on a mass scale. The double firing will entail to a lot of expenditure also.

My own feelings are, on the basis of the studies undertaken by Lucas, that the firing of the pots of the Black-and-Red Ware was not very much different from other kinds of pot. In order to render the interior and a part of the upper exterior black, they were kept in contact with a carbonaceous substance. During the course of firing, the carbonaceous substance rendered only those portions black, allowing the other parts to turn red.

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IX

Conclusion

The details of the types in different parts of the country, the patterns of painting on them, the fundamental difference in the cultural equipments and other cultural traits should not, it is confidently presumed, leave any doubt to the simple conclusion that the people who used the Black-and-Red Ware in various parts of India or outside at various stages of time were not one and the same. The theory of the migration of people from one region to the other or from one country to the other, so far as the Black-and-Red Ware is concerned, will evidently mean water tight compartments in the cultural field in different parts of the country and the world. Community movement, based on the occurrence of Black-and-Red Ware only, presumes by itself that various areas were devoid of any habitation before the arrival of the Black-and-Red Ware people on the scene. Arthur Keith's remarks in this connection are very valuable. He said, "The bridge which links the Pathans of the North-west to the hill tribes of Travancore is still in existence. If evolution be true and if the 352 millions of people now in India are members of the same great branch of humanity, this ought to be the case. Yet, strange to say, all or nearly all, who have sought to explain the differentiation of the population of India into racial types, have sought the solution of this problem outside the Peninsula. They have never attempted to ascertain how far India has bred her own races. They have proceeded on the assumption that evolution has taken place long ago and far away, but not in the great anthropological paradise of India."[1] The theory of introduction of any culture by

1. S.S. Sarkar, The Aboriginal Races of India, pp. 18-19.

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foreigners is applicable within the country as well. The theory falls to the ground if we compare two adjoining regions. Take for example the Harappans and the Aharians *i.e.*, those occupying the Banas Valley. If it is supposed that Harappans were Dravidians and they were responsible for the introduction of Black-and-Red Ware in South-eastern Rajasthan, it would mean that Banas Valley was devoid of any habitation before the arrival of the Harappans. The case, however, is entirely different. For a considerable time the occupation at Ahar was contemporaneous with the Harappa Culture. Another view may be presented in this context viz., that before the Harappa Culture came to an end, a substantial part of the population moved down to South-eastern Rajasthan. In that case one fundamental question which will crop up is 'how the Harappans forgot their advanced knowledge in every field immediately after they moved down to South-eastern Rajasthan'? The similarities in pottery or certain other antiquities at two sites or in two parts of the country should not necessarily make any archaeologist rush to the conclusion that one set of people moved from one place to the other or one region to the other. The conclusion has at its root the inability of the archaeologists to distinguish between a culture and a cultural trait. Both of them should not be confused into one. A cultural trait can very well be adopted by another culture or group of people. It does not necessarily imply that the same group of people moved to the other region to introduce the particular cultural trait. Before arriving at any specific conclusion, regarding wholesale migration of people from one region to the other, the cultural characteristics as a whole should be taken into consideration. While declaring the movement of people in the case of Black-and-Red Ware, the archaeologists have not only ignored the entirety of cultural traits, but even the Black-and-Red Ware as a whole. Social contact has always played a vital role in adaptaion of certain characteristics. The same is true in the case of Black-and-Red Ware as well. A set of people in certain parts of the country learnt and adopted the technique of producing vessels with a red exterior and black interior from the group of people in another region. There was no mass

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movement of people so far as the occurrence of the Black-and-Red Ware at different sites and different parts of the country is concerned. Once the question of mass movement of people is turned down, there is hardly any ground for assigning the authorship of the Black-and-Red Ware to Aryans or Dravidians or any other community.

In conclusion it may be remarked that, before assigning the authorship of Black-and-Red Ware to Dravidians, Aryans or any other single community, the archaeologists will have to search for a single group of people who occupied the entire country from Rupar in the north to Adichanallur in the south and Amra and Lakhabawal in the west to Pandu-Rajar-Dhibi in the east, though at different stages of time. It has already been made amply clear that the Black-and-Red Ware encompassed the entire country of India from 2400 B.C. down to the beginning of the Christian era, particularly during the major part of the second and first millenium B.C. In order to establish that the pottery represented a single culture with evolutions and devolutions in points of time and space, the primary necessity would be to trace out a group of people, tribe, race or community which occupied different parts of the country. Scholars who considered the Ware to represent the Dravidians or Aryans, moving from one place to the other, never took into account all the sites which have yielded Black-and-Red Ware. As a matter of fact, the ceramic was studied by them only partly and in such a manner that it could be adjusted to a particular theory, ignoring completely all the sites and the cultural traits. So far as the knowledge of the author goes, there was not a single community in ancient India which spread to and occupied all corners of the country. Hence, it would be hazardous to remark that the Black-and-Red Ware was the identity card of one particular community or ethnic group which was responsible for the introduction of Black-and-Red Ware at all sites in India during the course of its movements from one place to the other. That the ceramic is not the trait of a single ethnic group is also corroborated by the varying cultural contexts in which it occurred in various parts of the country.

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INDIA

SHOWING THE PRINCIPAL BLACK-AND-RED WARE SITES

200 0 200 KILOMETRES

PAKISTAN
R. INDUS
R. JHELUM
R. RAVI
R. SUTLEJ
RUPAR
HASTINAPUR
ALAMGIRPUR
DELHI
NEPAL
D
ATRANJIKHERA
NOH
GONDI
R. YAMUNA
R. GANGA
SRAVASTI
SOHAGAURA
CHIRAND
BANTHALI
CHOSLA
AHAR
GILUND
MANOTI
B
KAUSAMBI
RAJGHAT
C
BANGLA DESH
AWRA
KOLDIHWA
SONPUR
DESALPUR
A
NAGDA
ERAN
PANDU-RAJAR-DHIBI
UJJAIN
R. NARMADA
LOTHAL
MAHESWAR
CALCUTTA
RANGPUR
ROJDI
NAVDATOLI
R. MAHANADI
PRAKASH
PRABHAS PATAN
BAHAL
TEKWADA
NASIK
NEVASA
SISUPALGARH
JORWE
JAUGADA
BAY
OF
BENGAL
BOMBAY
DAIMABAD
R. GODAVARI
CHANDOLI
E
KESARAPALLI
WATGAL
MASKI
NAGARJUNAKONDA
TEKKALAKOTA
HADARGERI
SANGANAKALLU
HALLUR
KUNBEV
BRAHMAGIRI
F
MADRAS
SANUR
ARABIAN SEA
LACCADIVE, MINICOY AND AMINDIVI ISLANDS (INDIA)
PORKALAM
ADICHANALLUR
ANDAMAN AND NICOBAR ISLANDS (INDIA)

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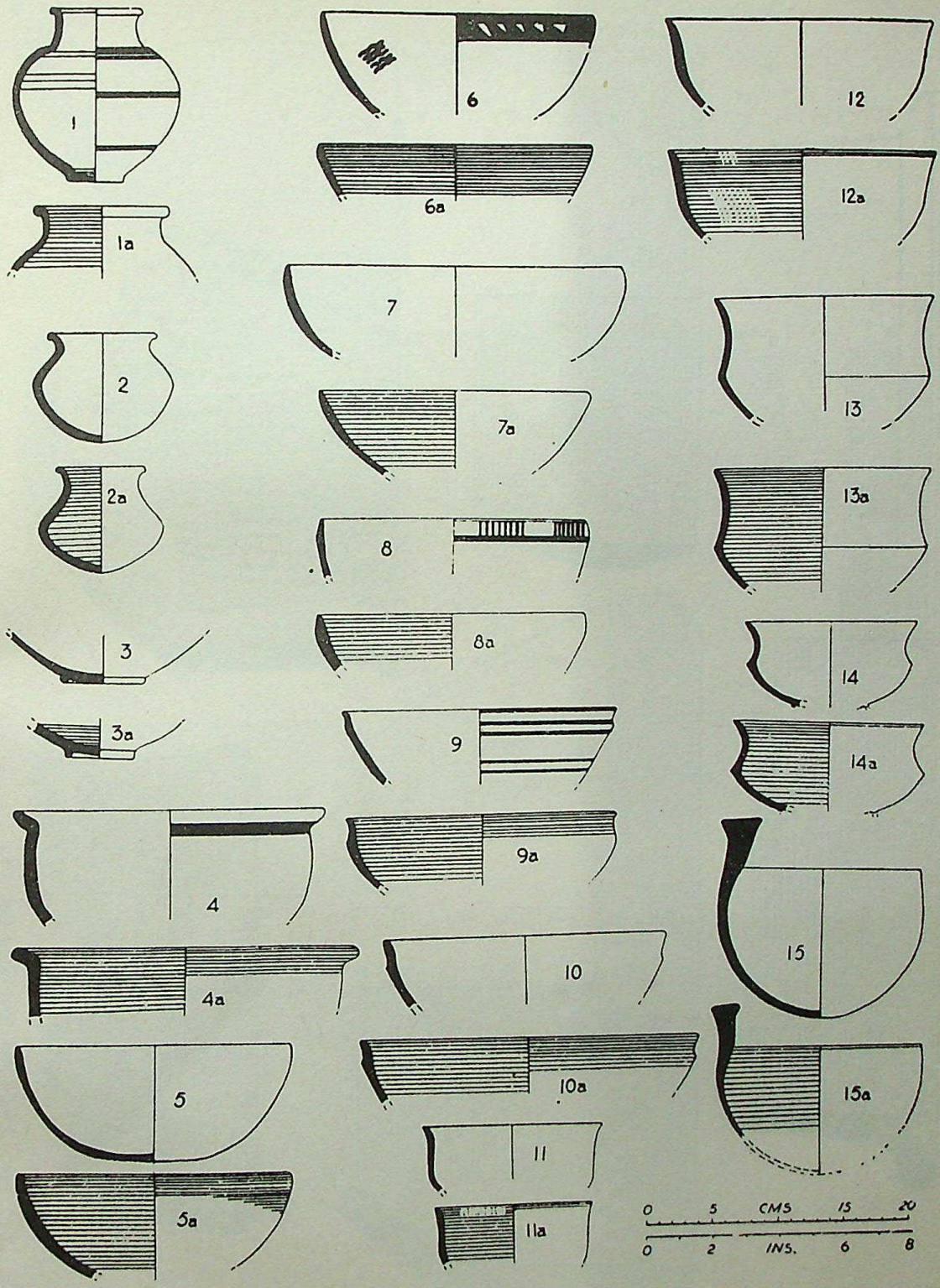

Fig. 1. Rangpur, Similar types in other wares.

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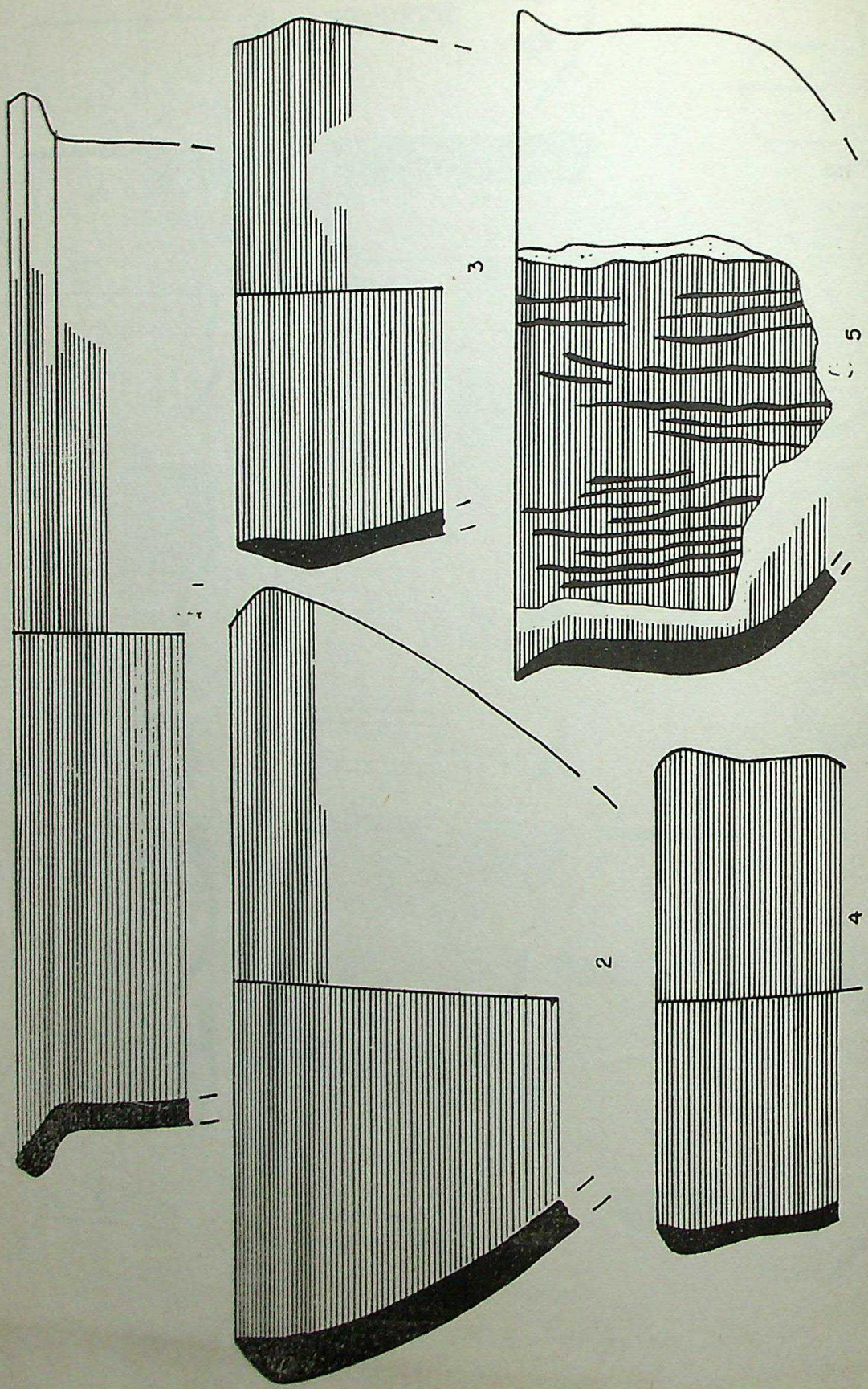

Fig. 2. Lothal, Black-and-Red ware.

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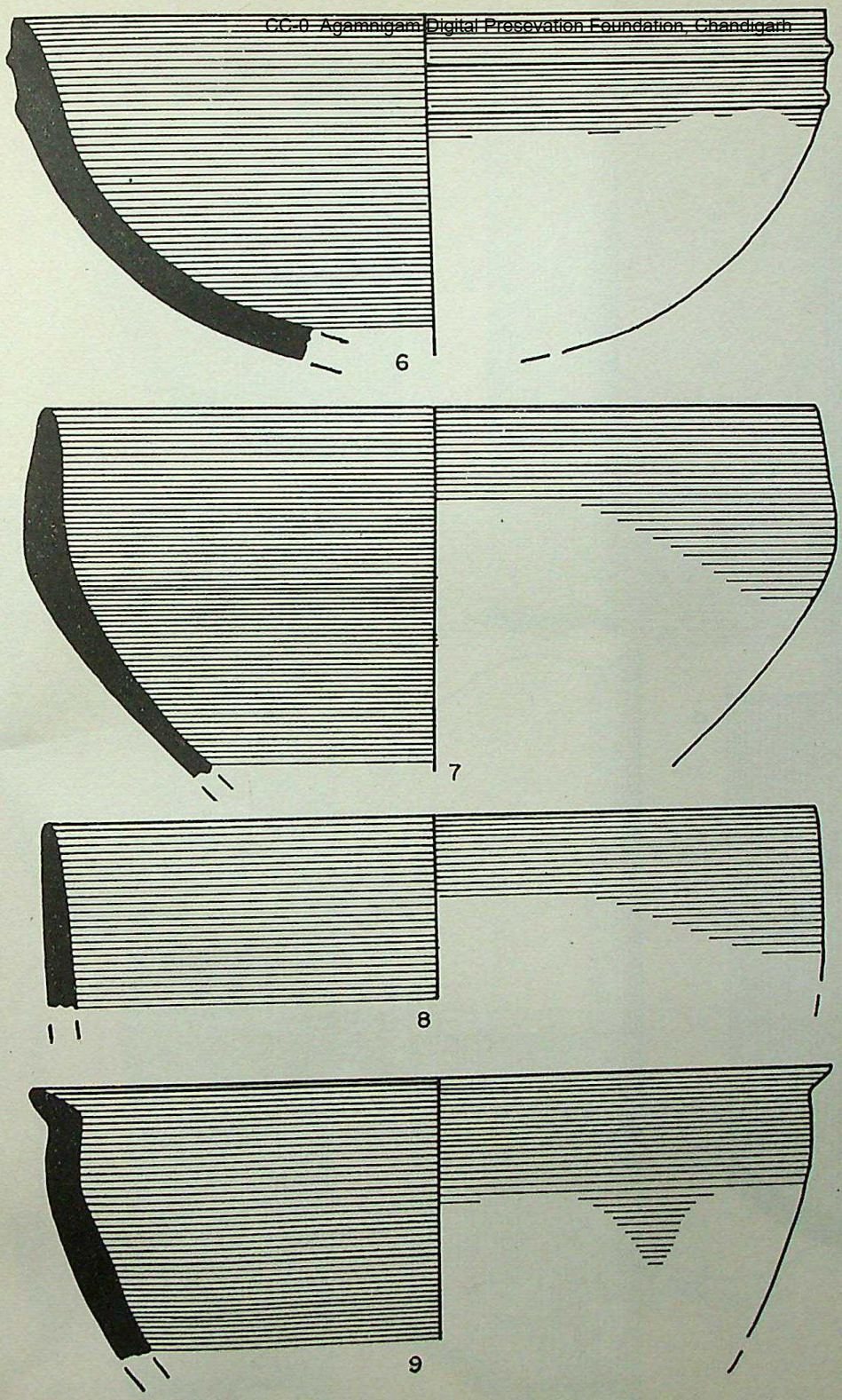

Fig. 3. Lothal, Black-and-Red ware.

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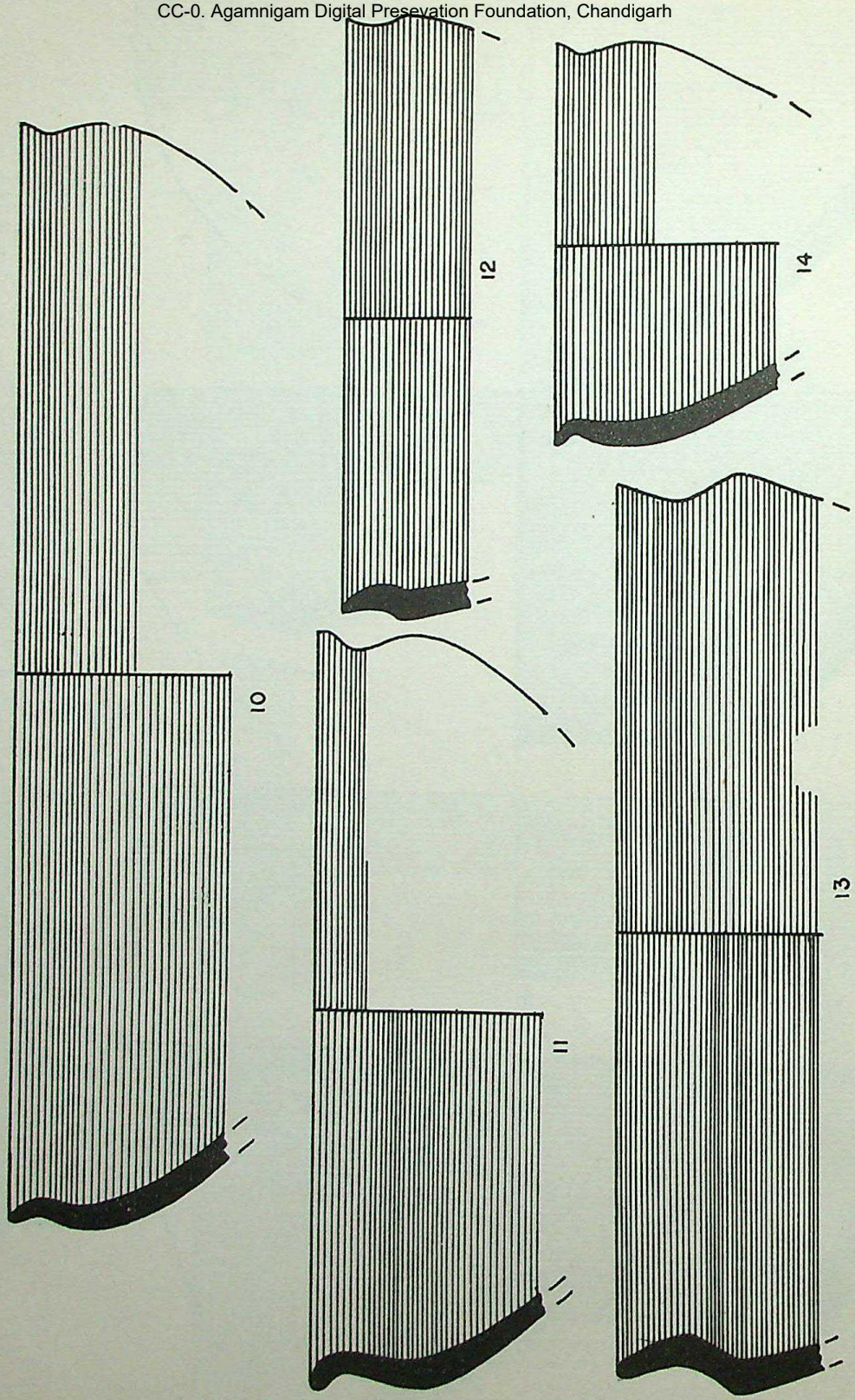

Fig. 4. Lothal, Black-and-Red ware.

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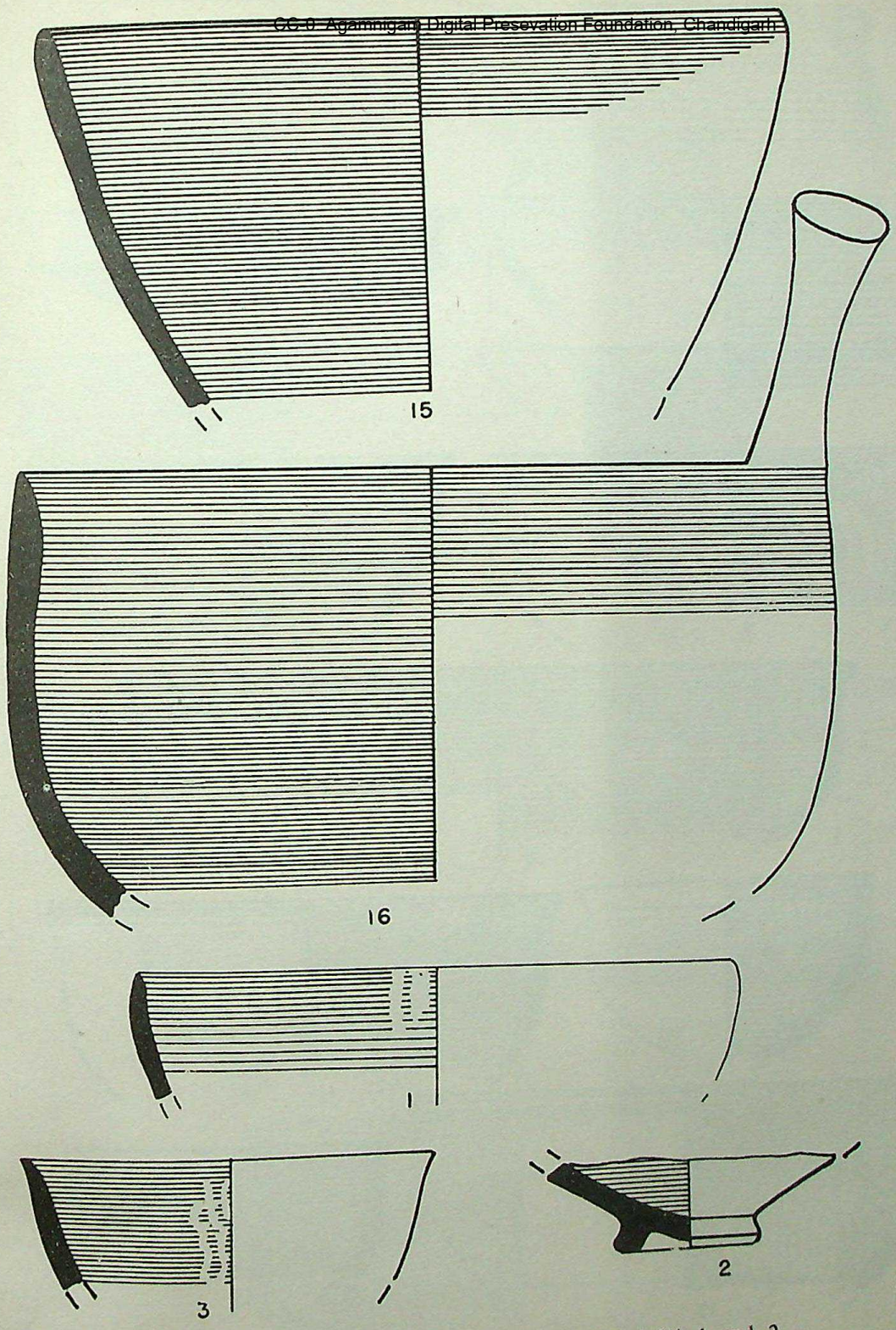

Fig. 5. Lothal, Black-and-Red Ware 15 and 16. Rangpur, Period IIA 1 and 2 and Period IIB, 2 and 3.

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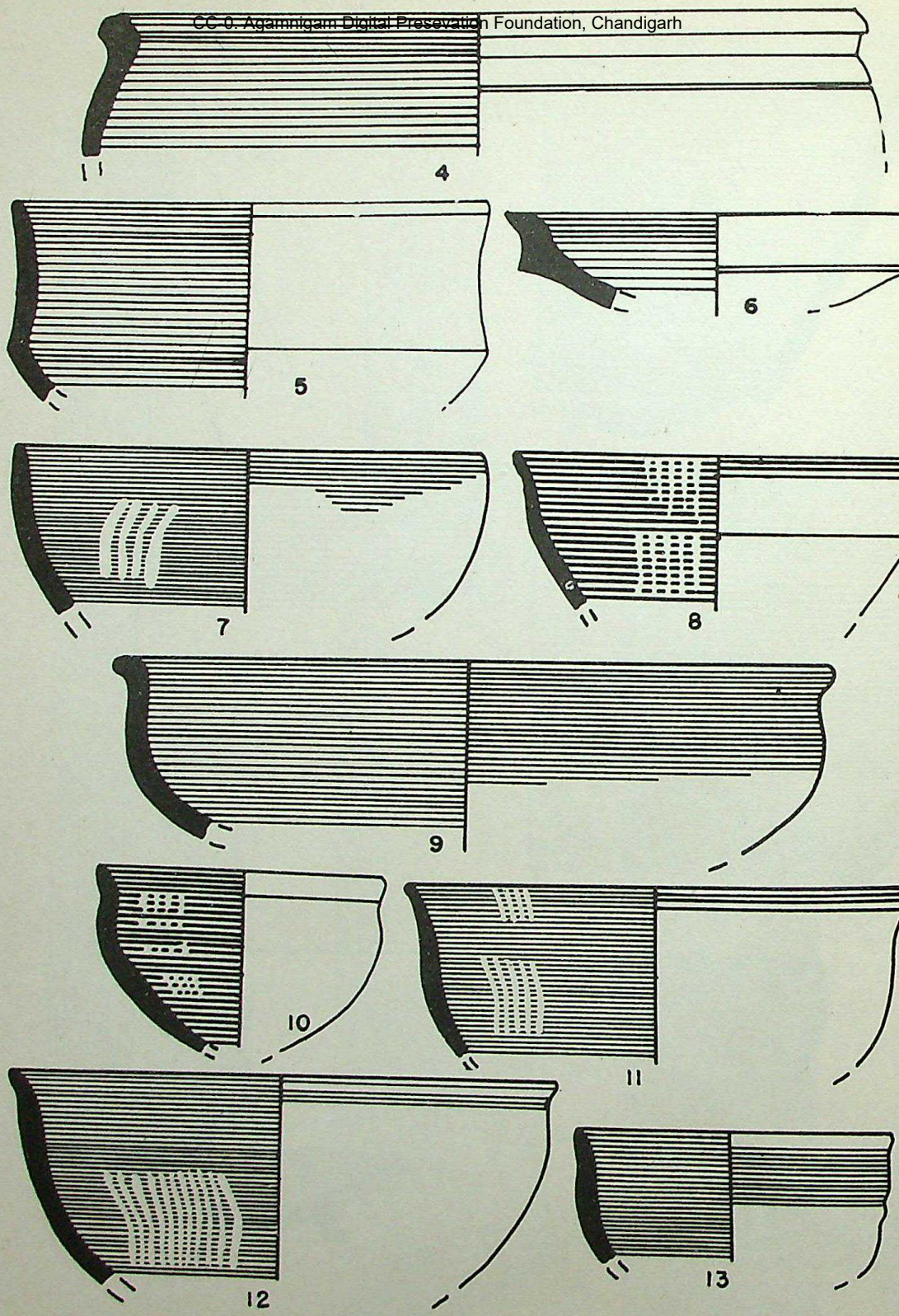

Fig. 6. Rangpur, Black-and-Red Ware, Period IIC, 4, 5 and 6 and rest Period III.

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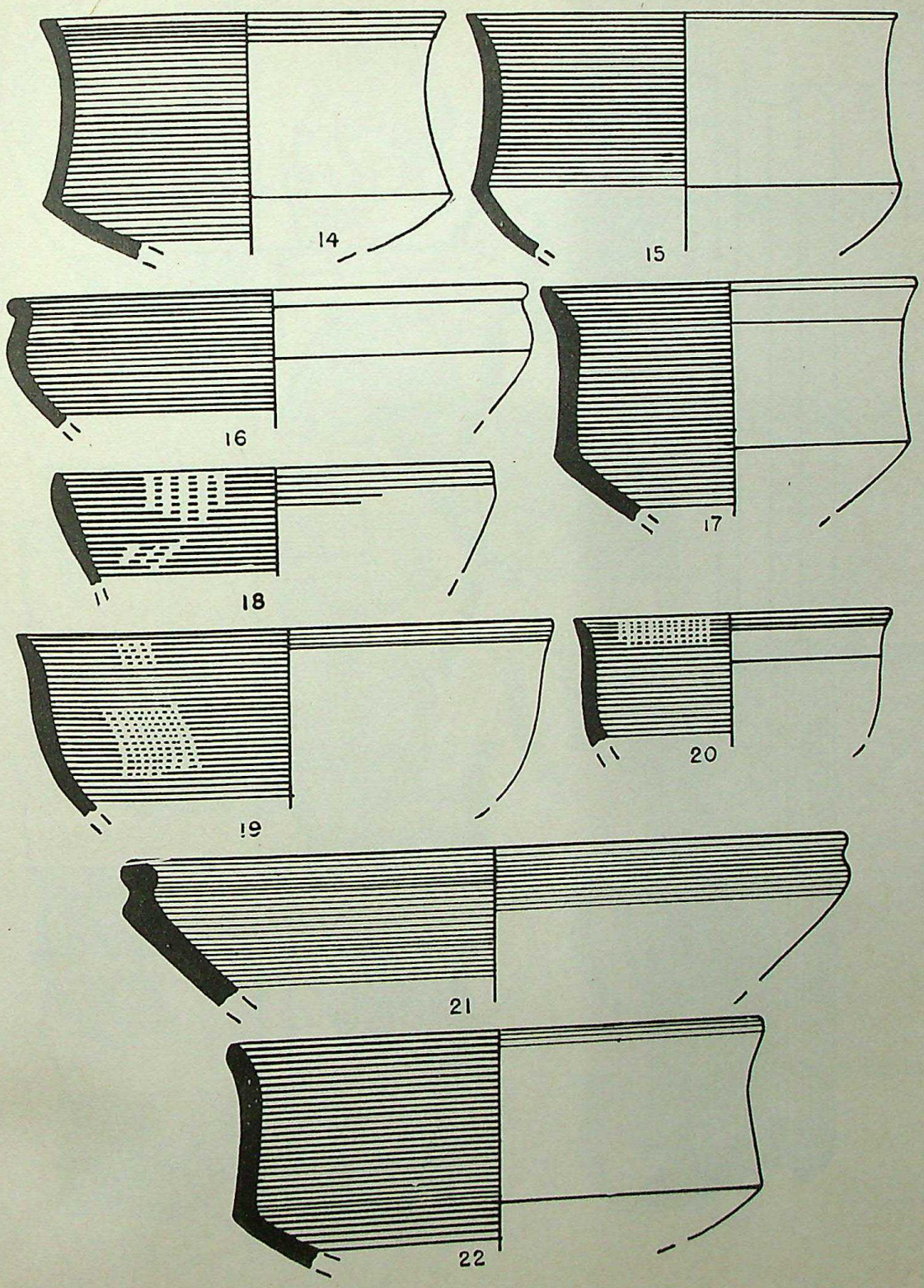

Fig. 7. Rangpur, Black-and-Red Ware, Period III.

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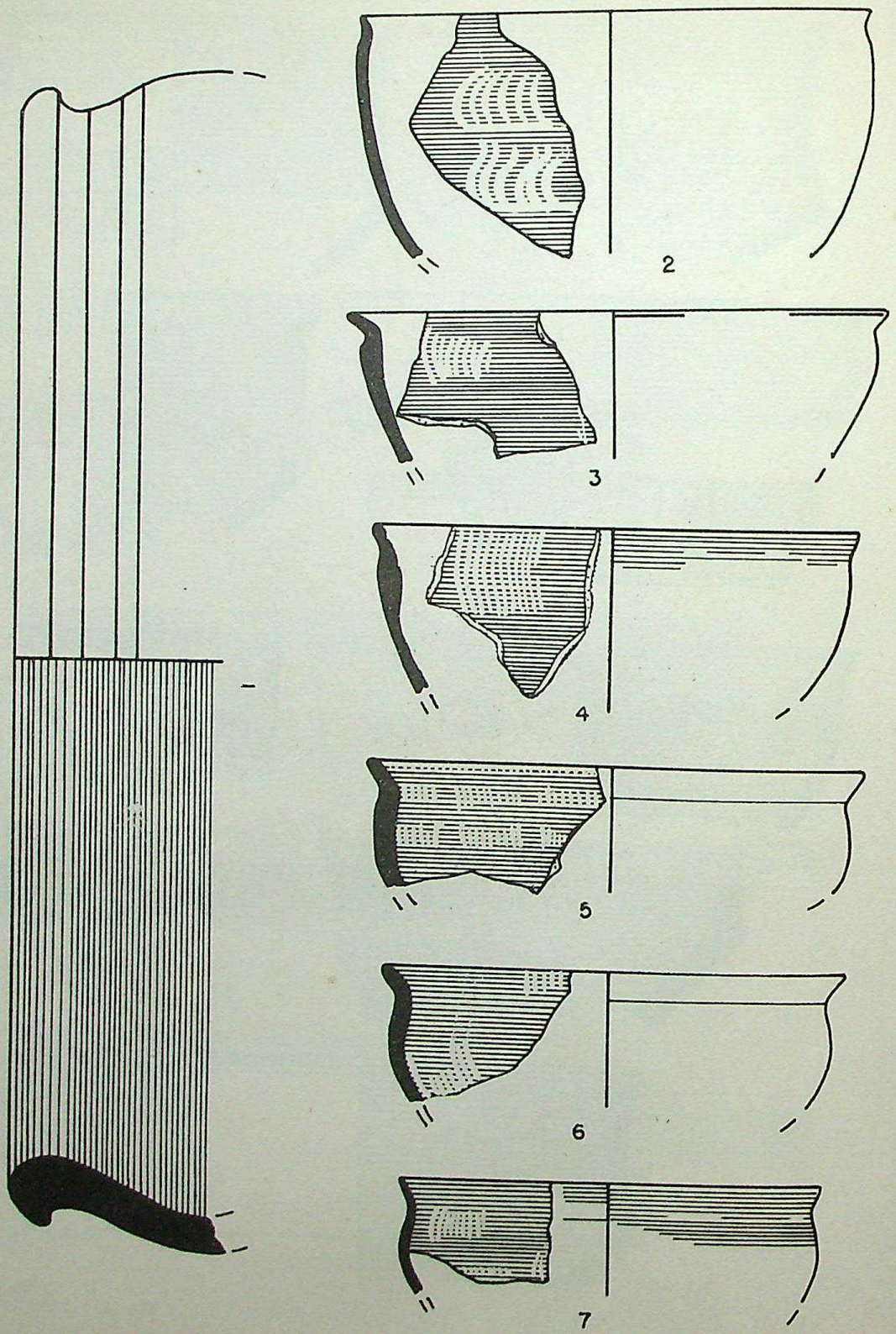

Fig. 8. Rojdi, Black-and-Red Ware, No. 1, Surkotada 2 to 7.

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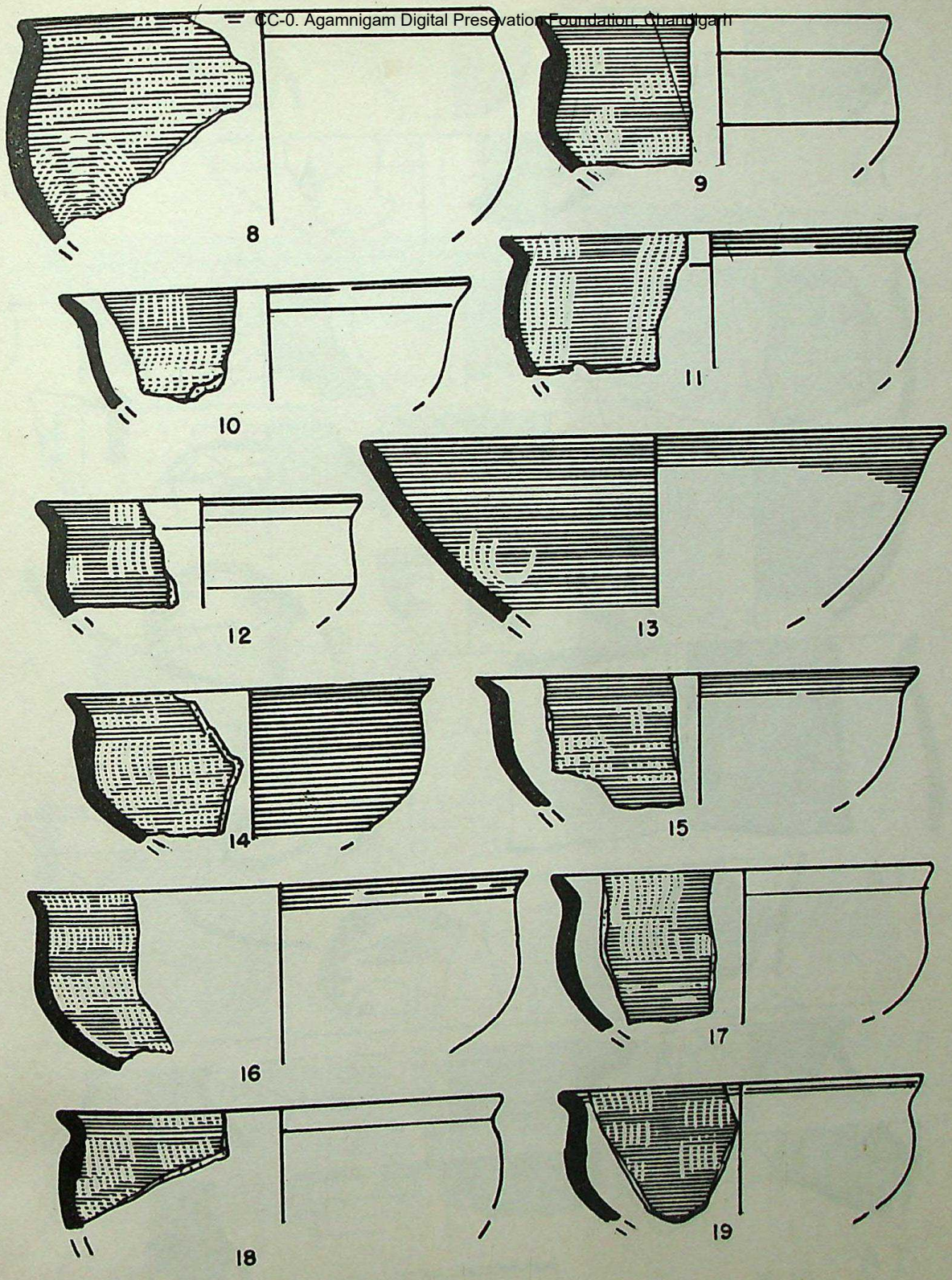

Fig. 9. Surkotada, Black-and-Red Ware.

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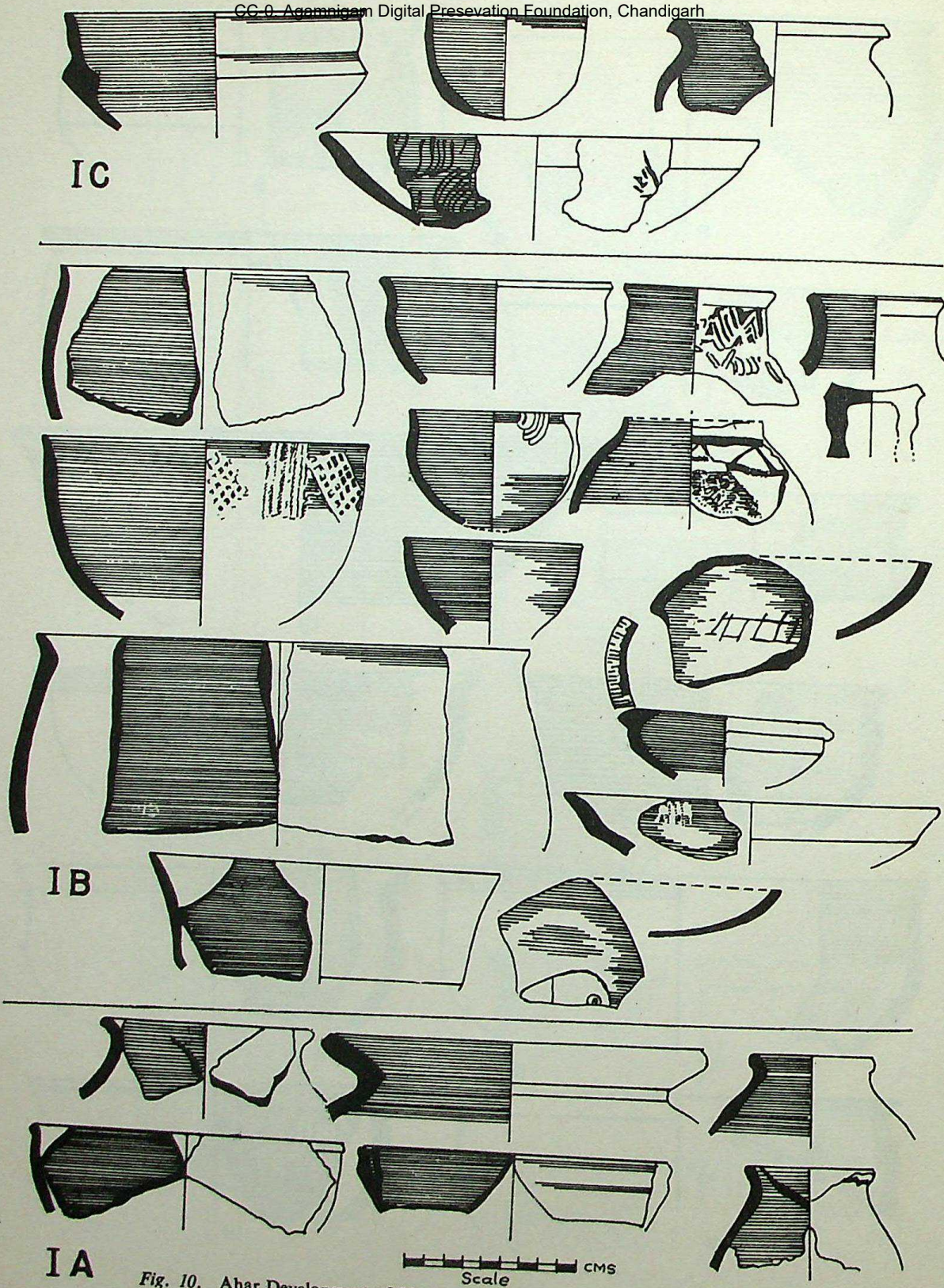

Fig. 10. Ahar Development of Black-and-Red Ware types.

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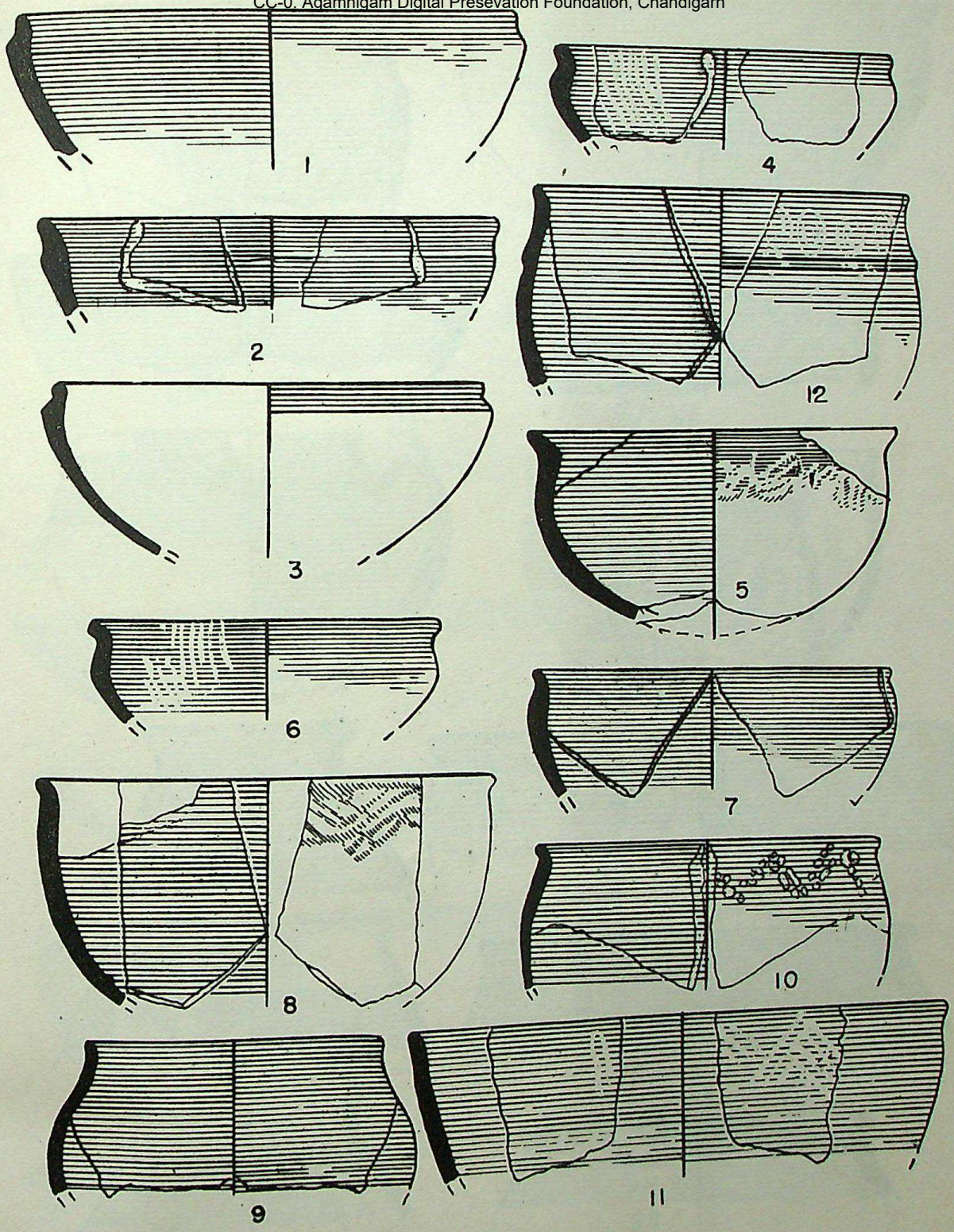

Fig. 11. Ahar IA, Black-and-Red Ware.

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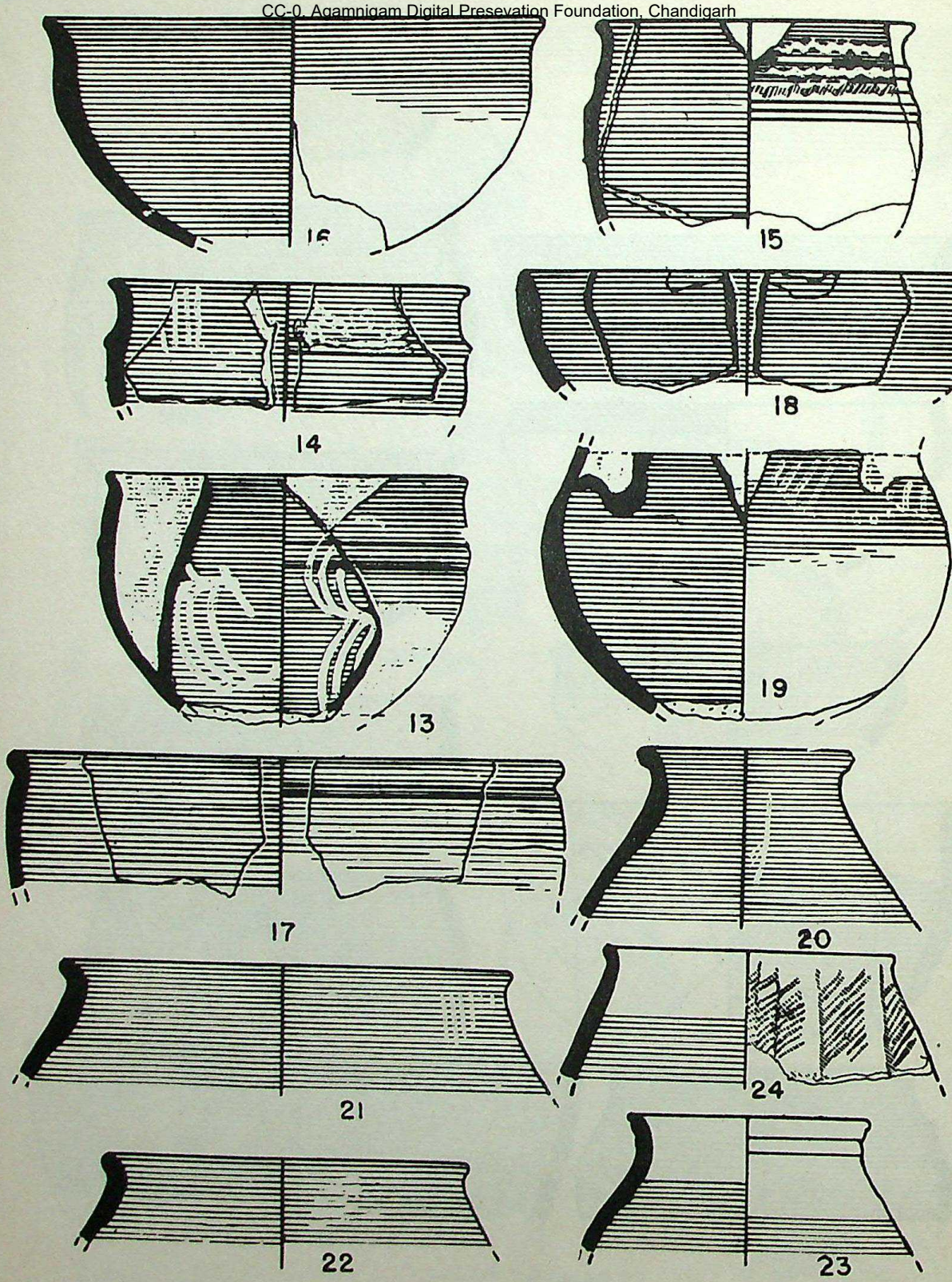

Fig. 12. Ahar IA, Black-and-Red Ware.

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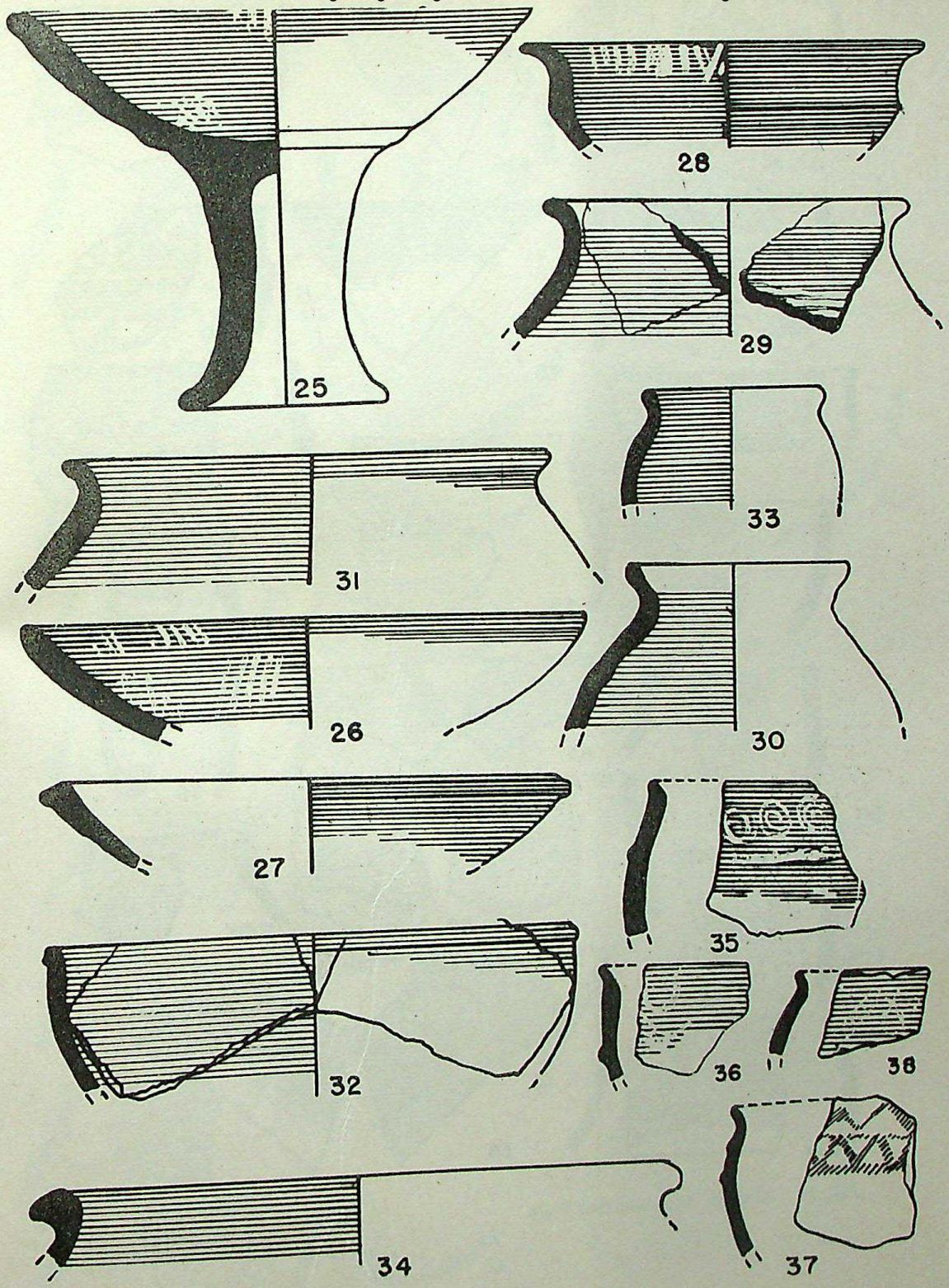

Fig. 13. Ahar IA, Black-and-Red Ware.

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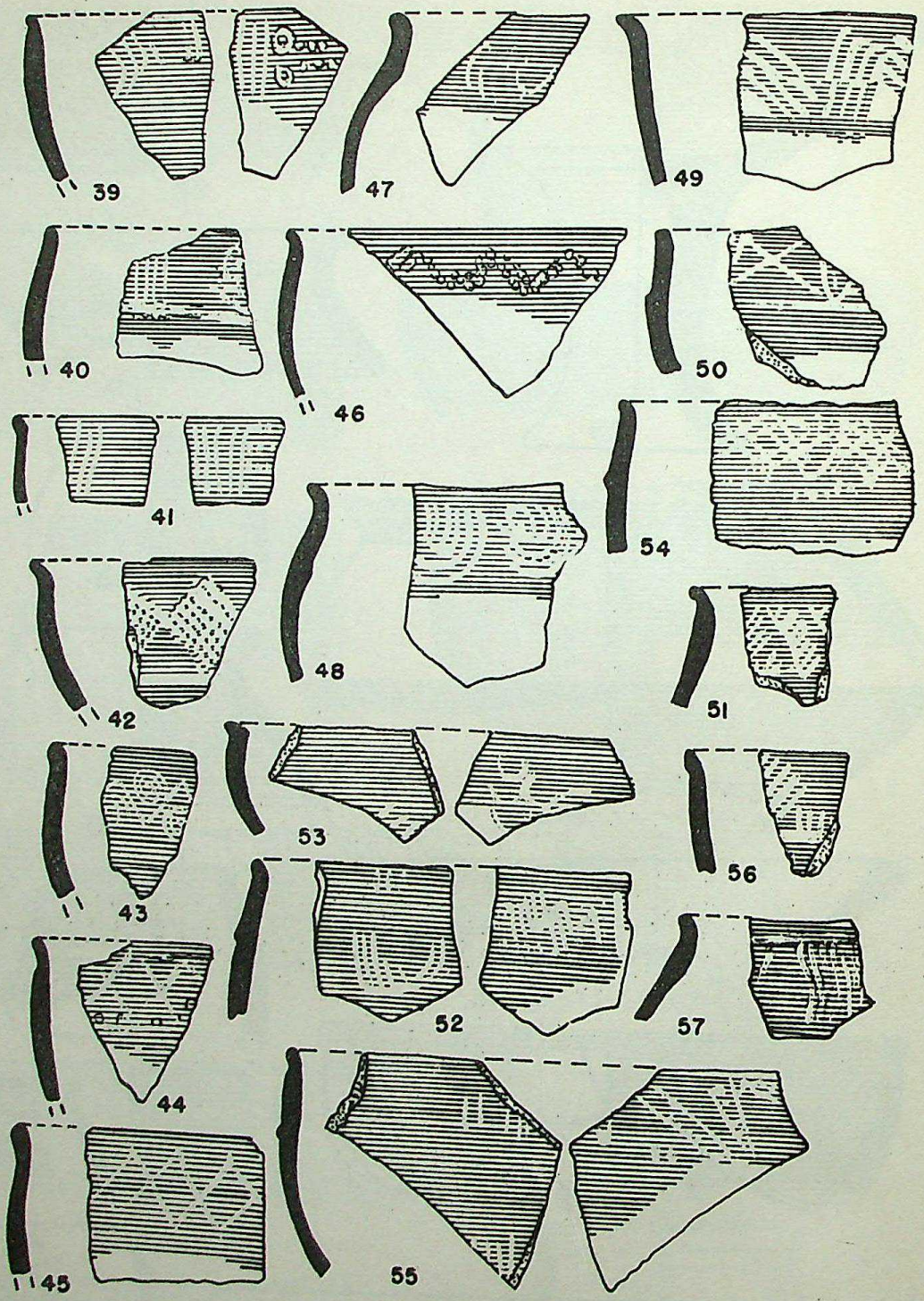

Fig. 14. Ahar IA, Black-and-Red Ware.

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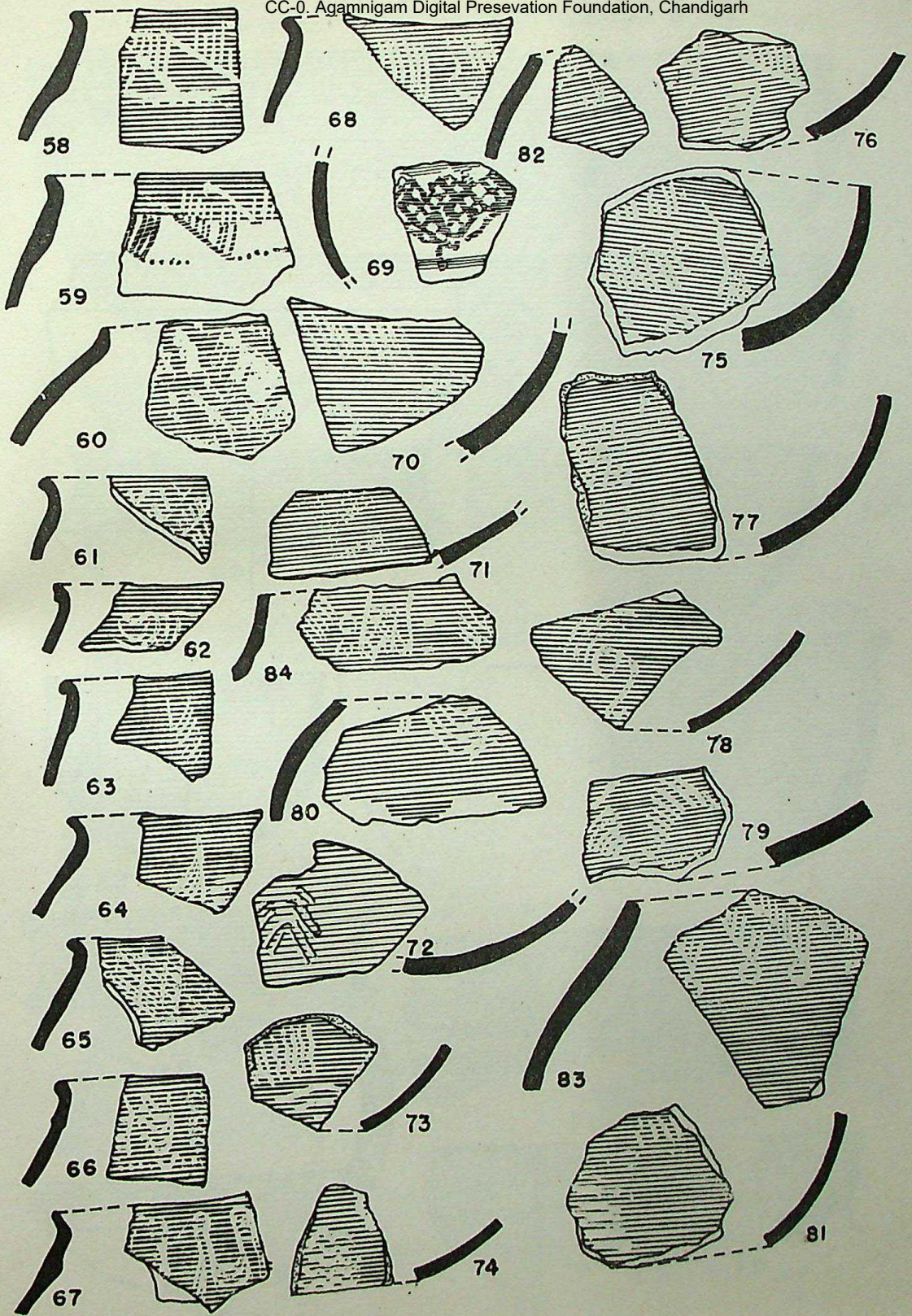

Fig. 15. Ahar IA, Black-and-Red Ware.

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Fig. 16. Ahar IB, Black-and-Red Ware.

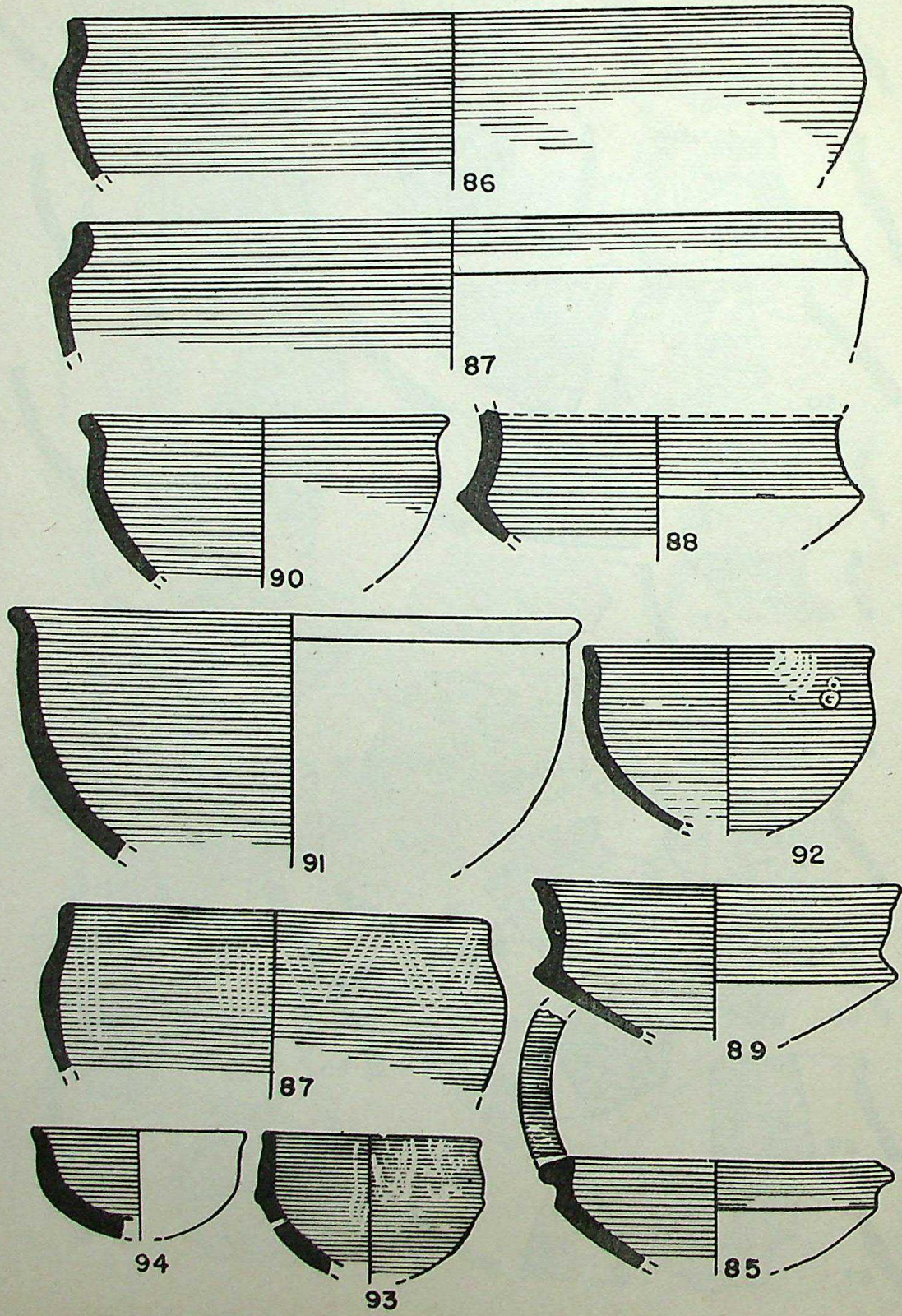

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Fig. 17. Ahar IB, Black-and-Red Ware.

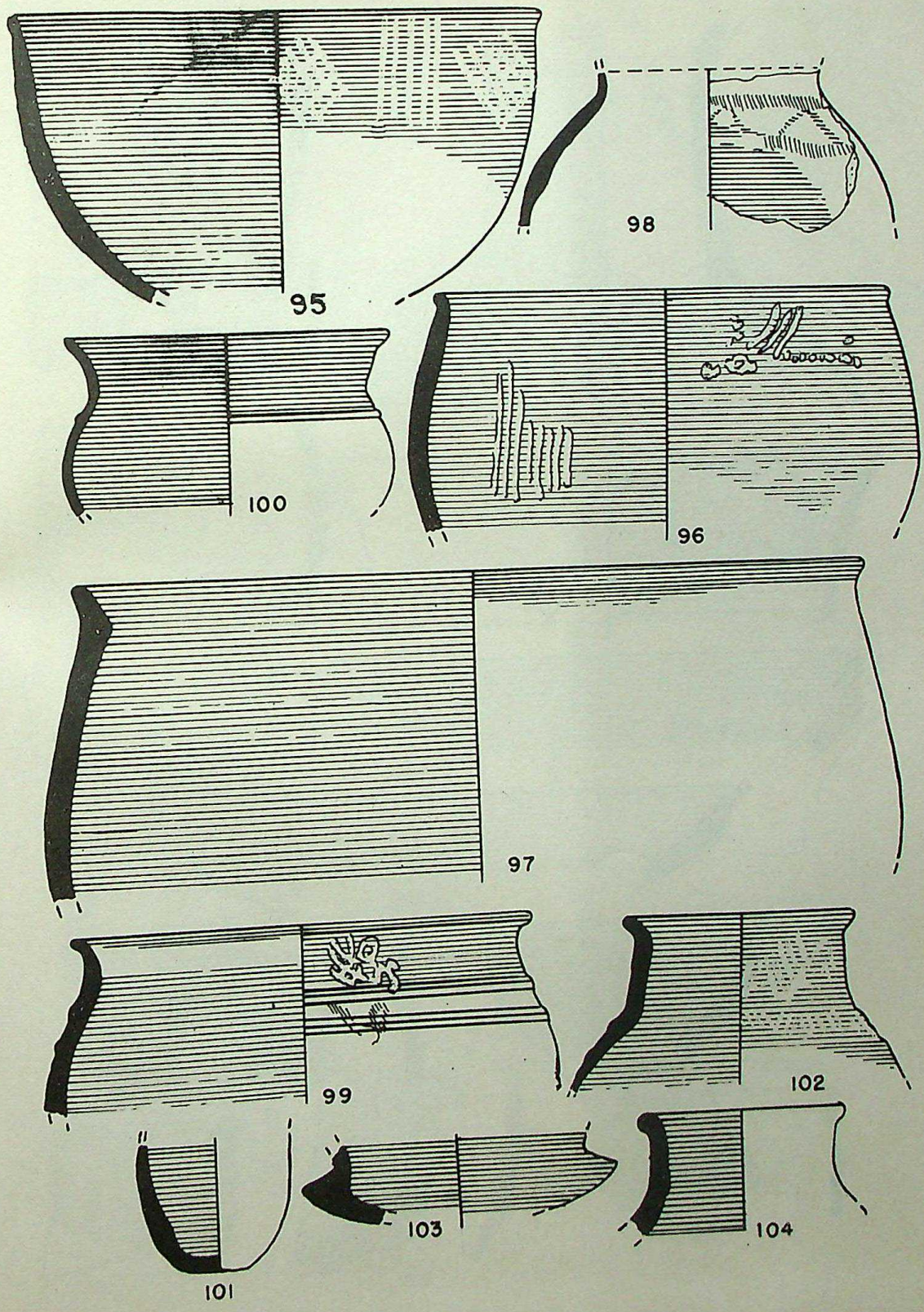

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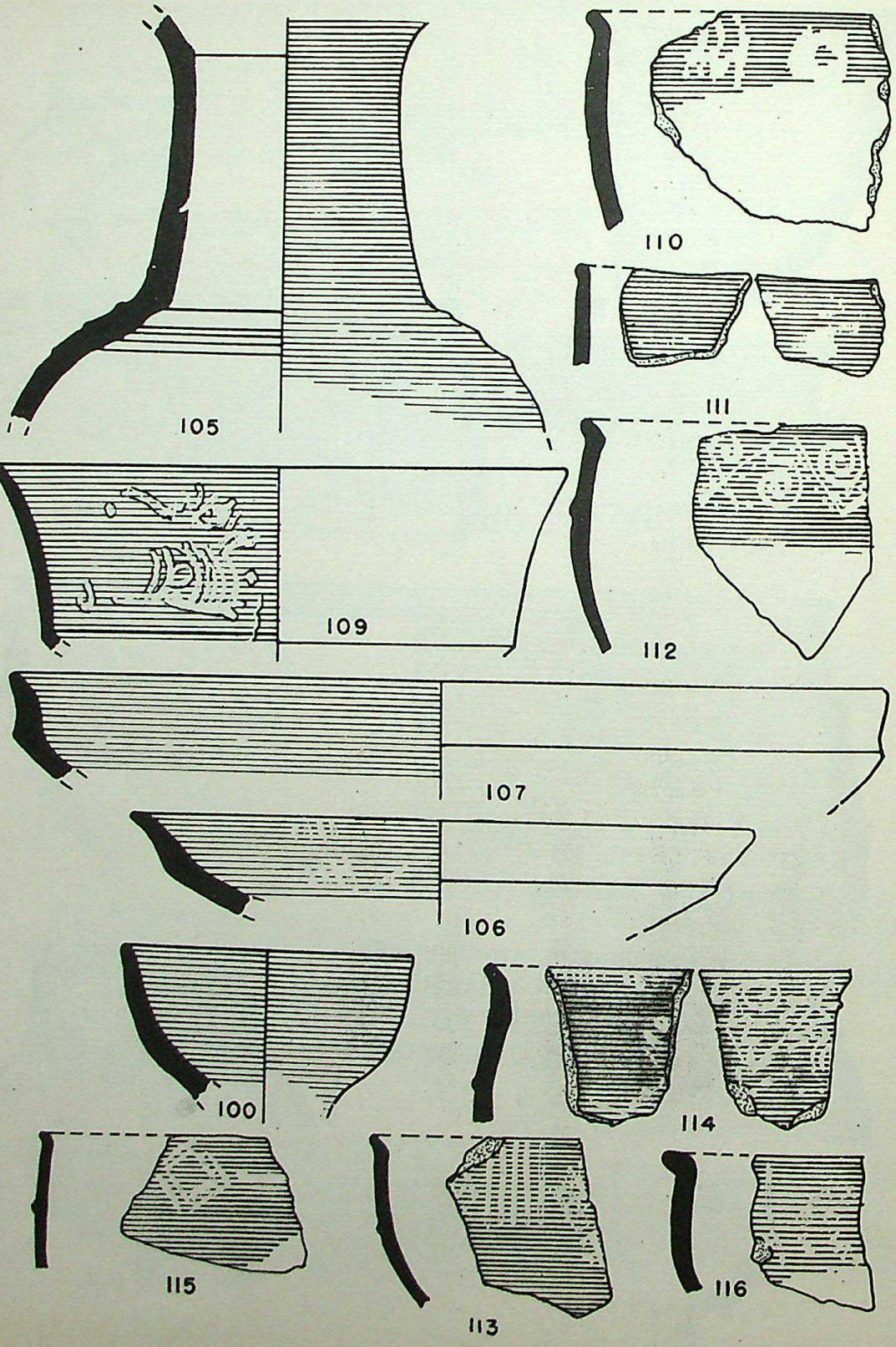
Fig. 18. Ahar IB, Black-and-Red Ware.



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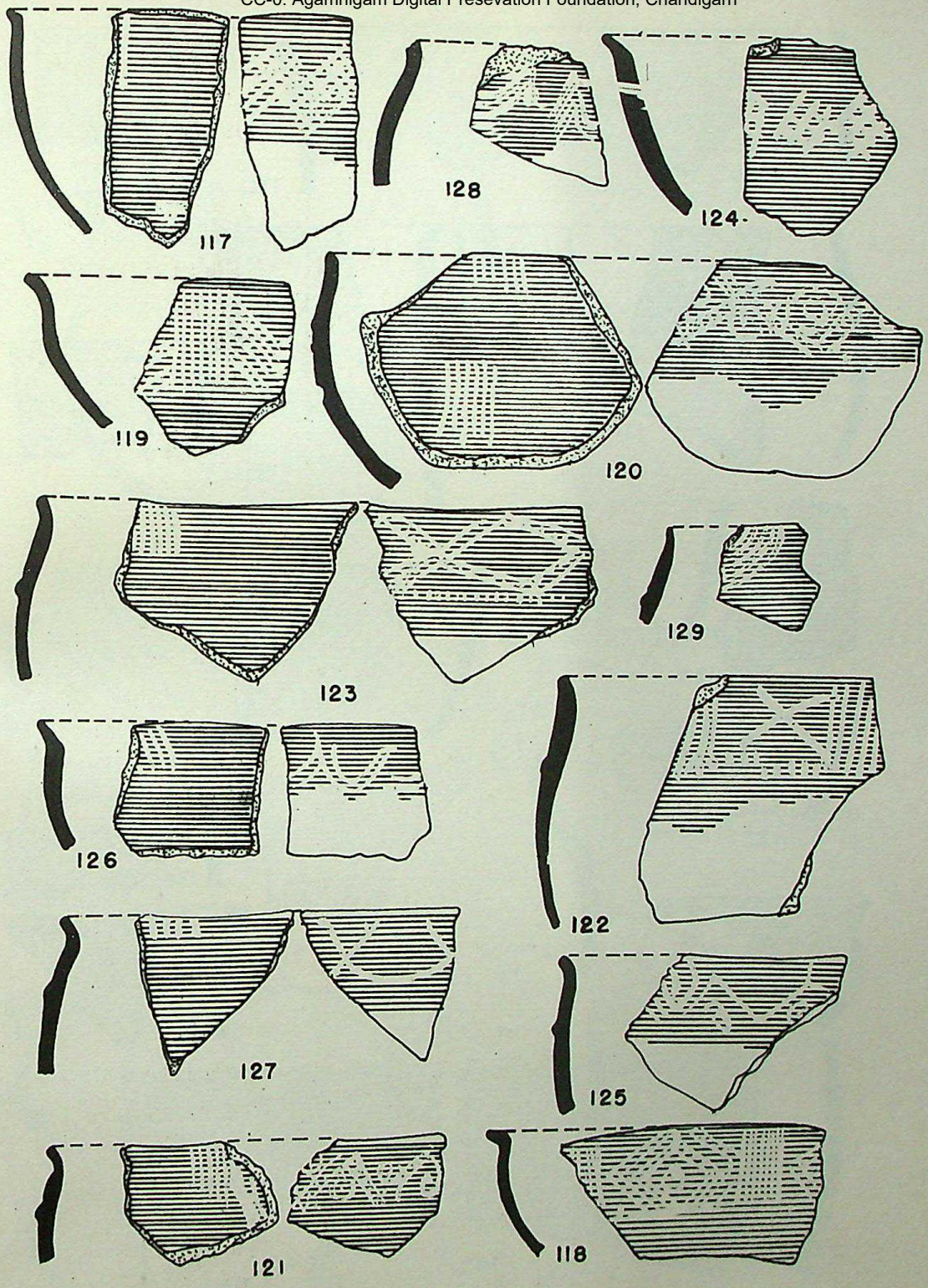

Fig. 19. Ahar IB, Black-and-Red Ware.

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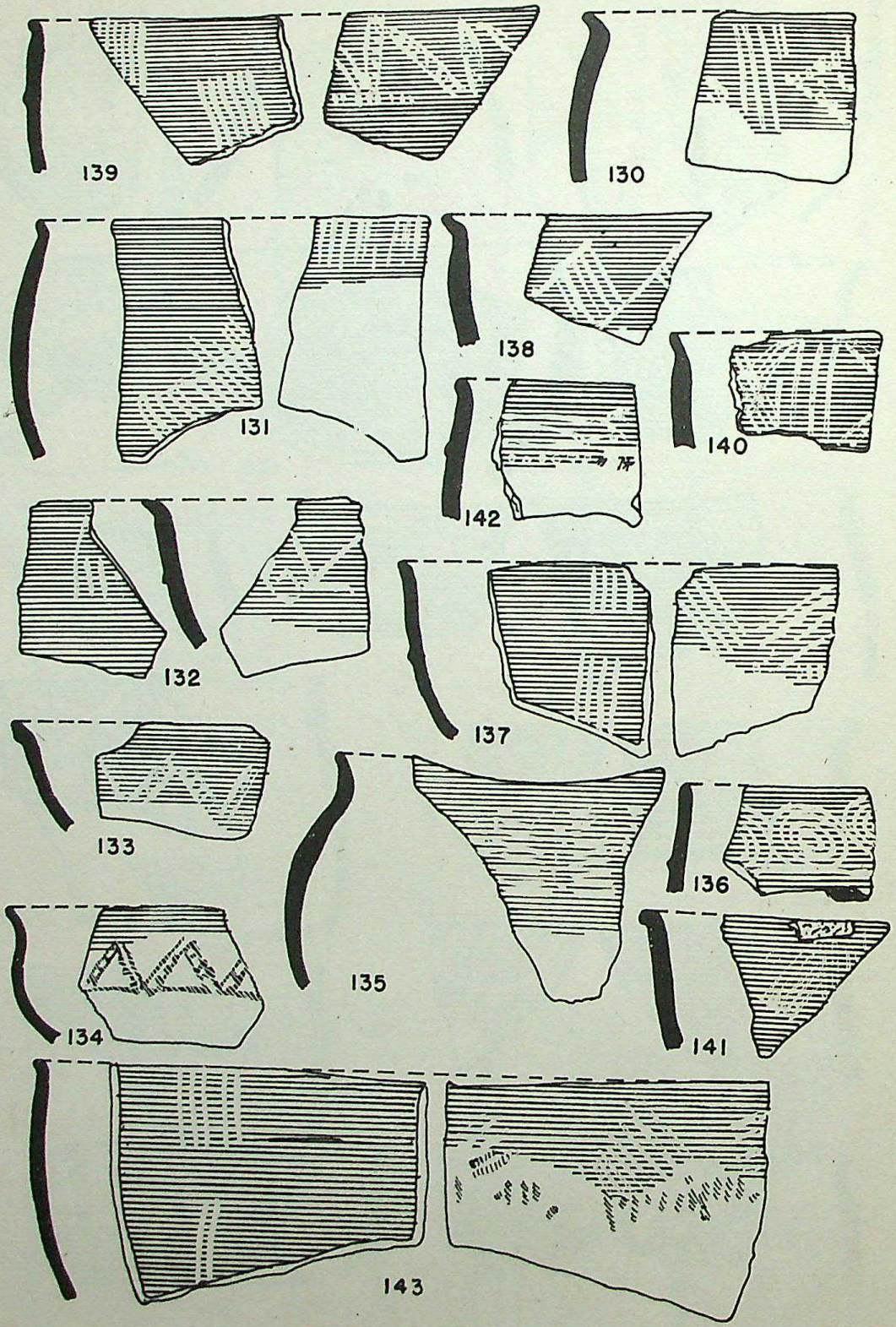

Fig. 20. Ahar IB, Black-and-Red Ware.

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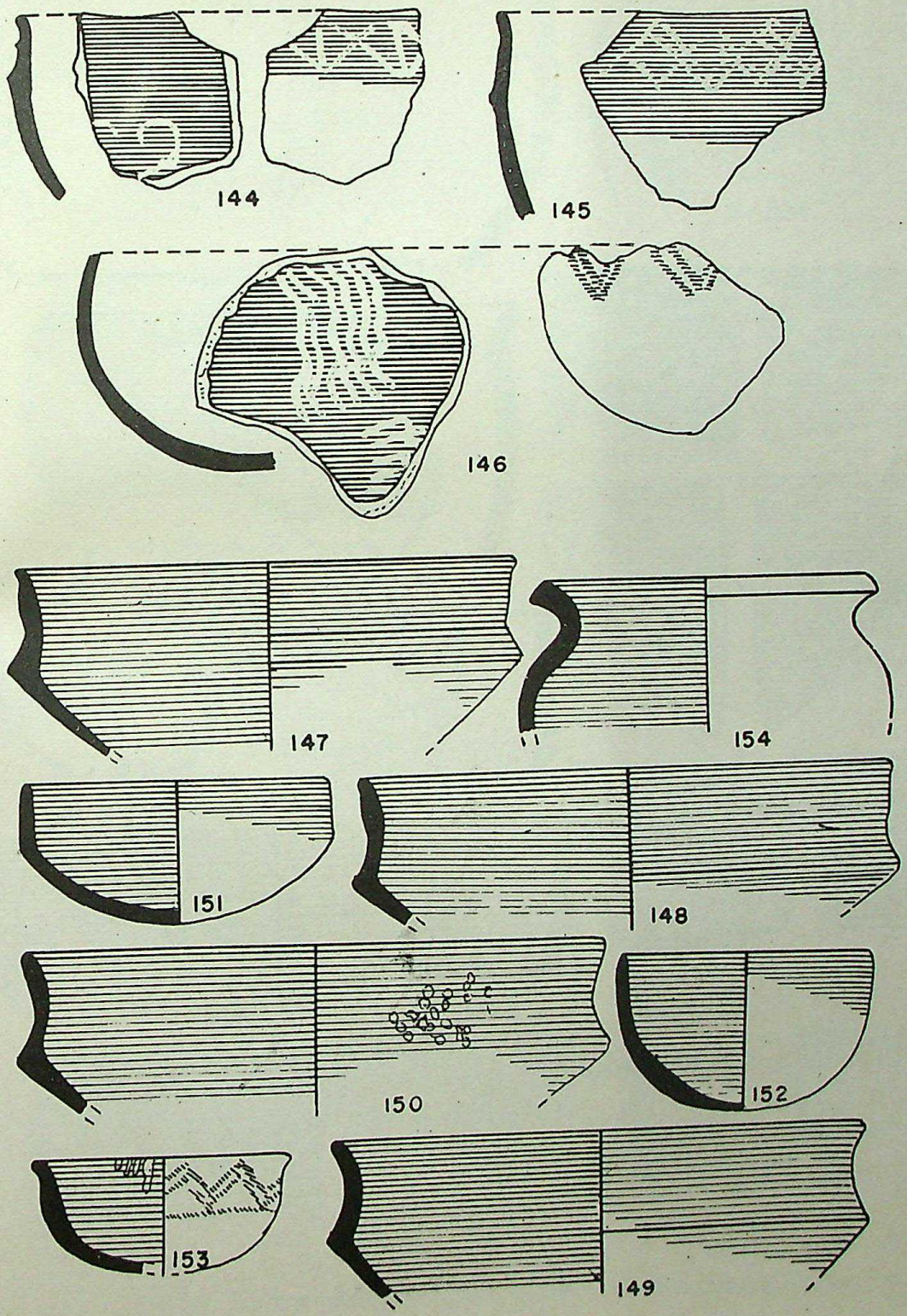

Fig. 21. Ahar IB, Black-and-Red Ware, 144 to 146 and rest IC.

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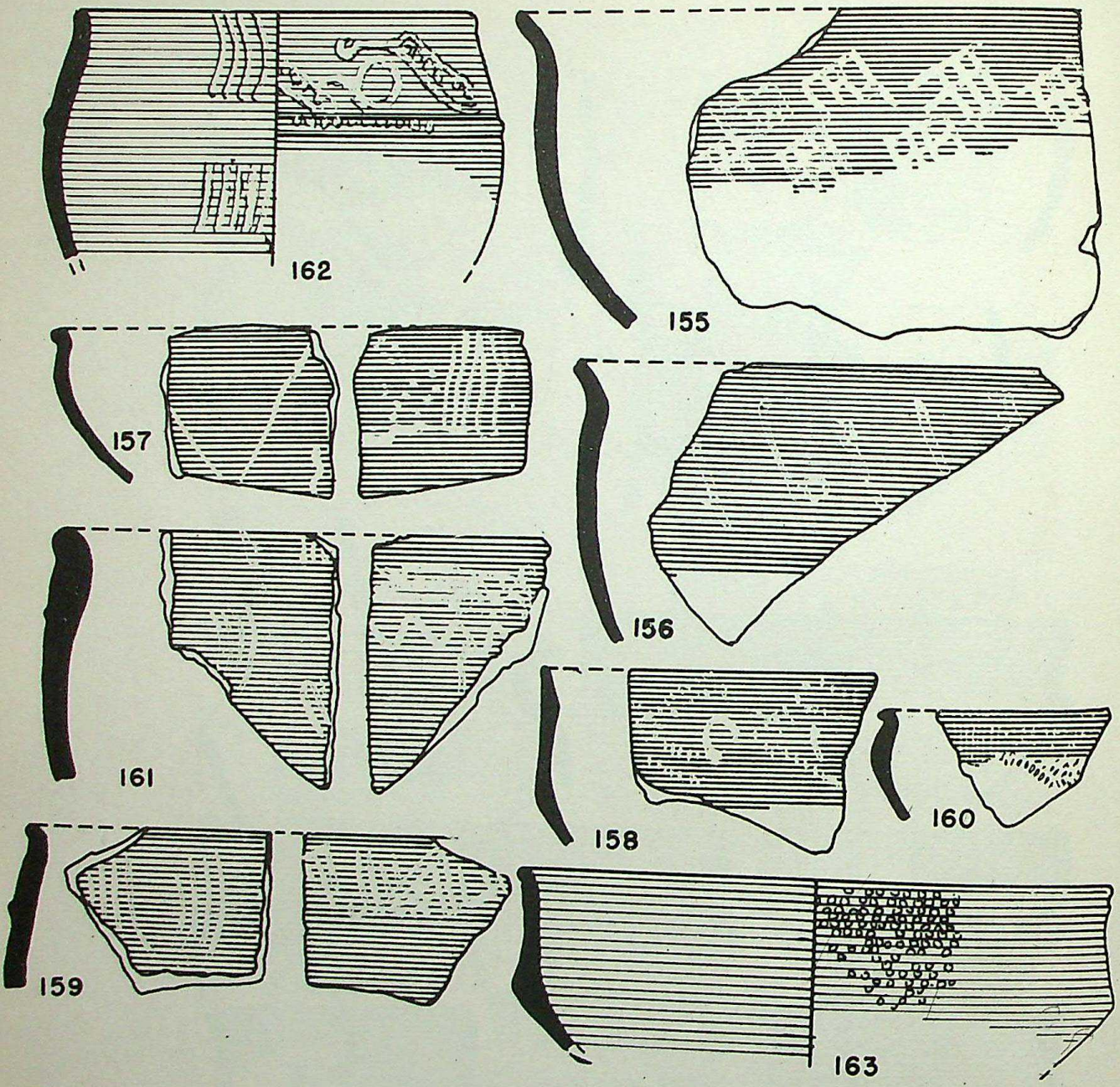

Fig. 22. Ahar IC, Black-and-Red Ware.

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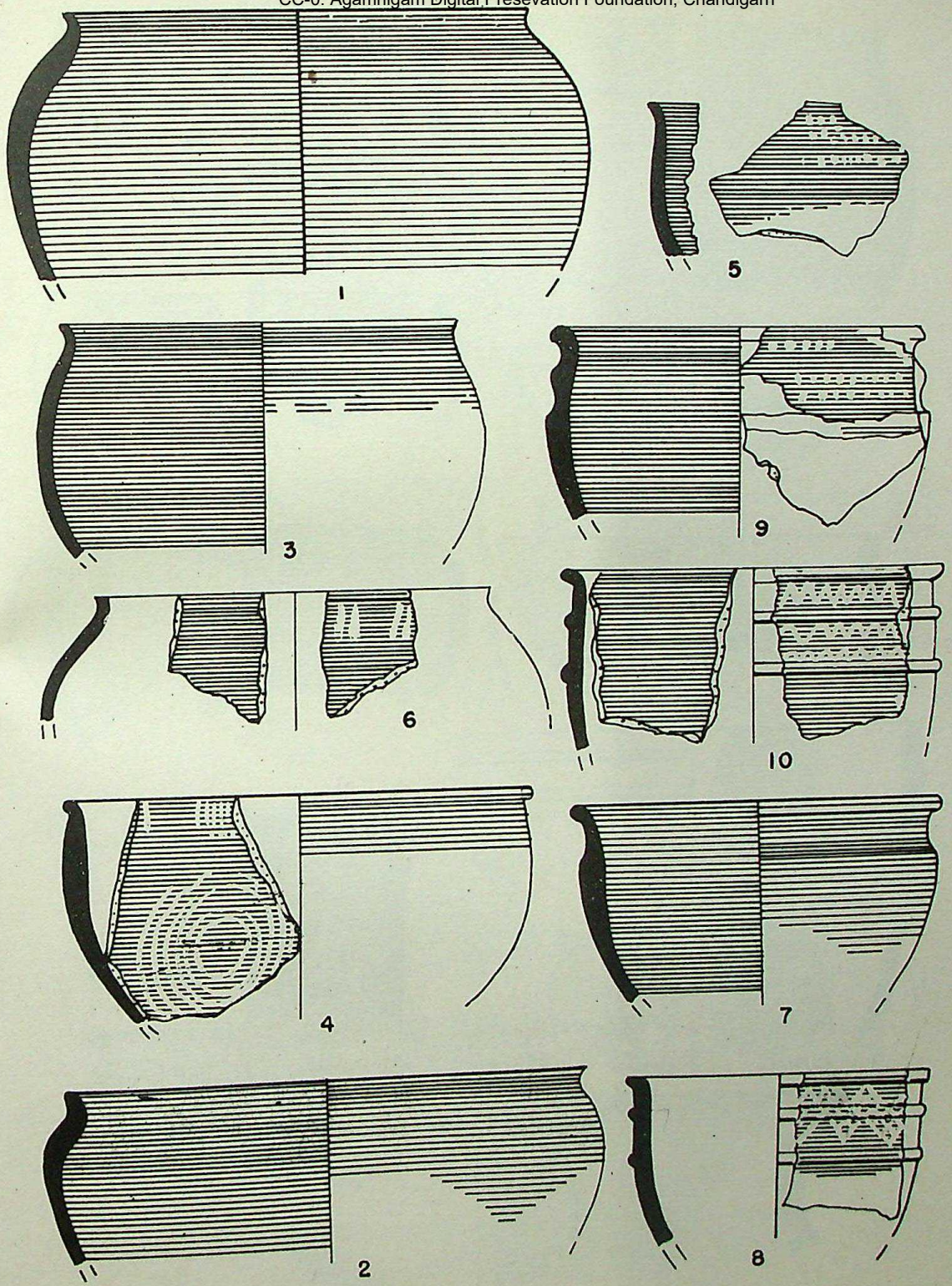

Fig. 23. **Black-and-Red Ware from other Sites in South-eastern Rajasthan.**

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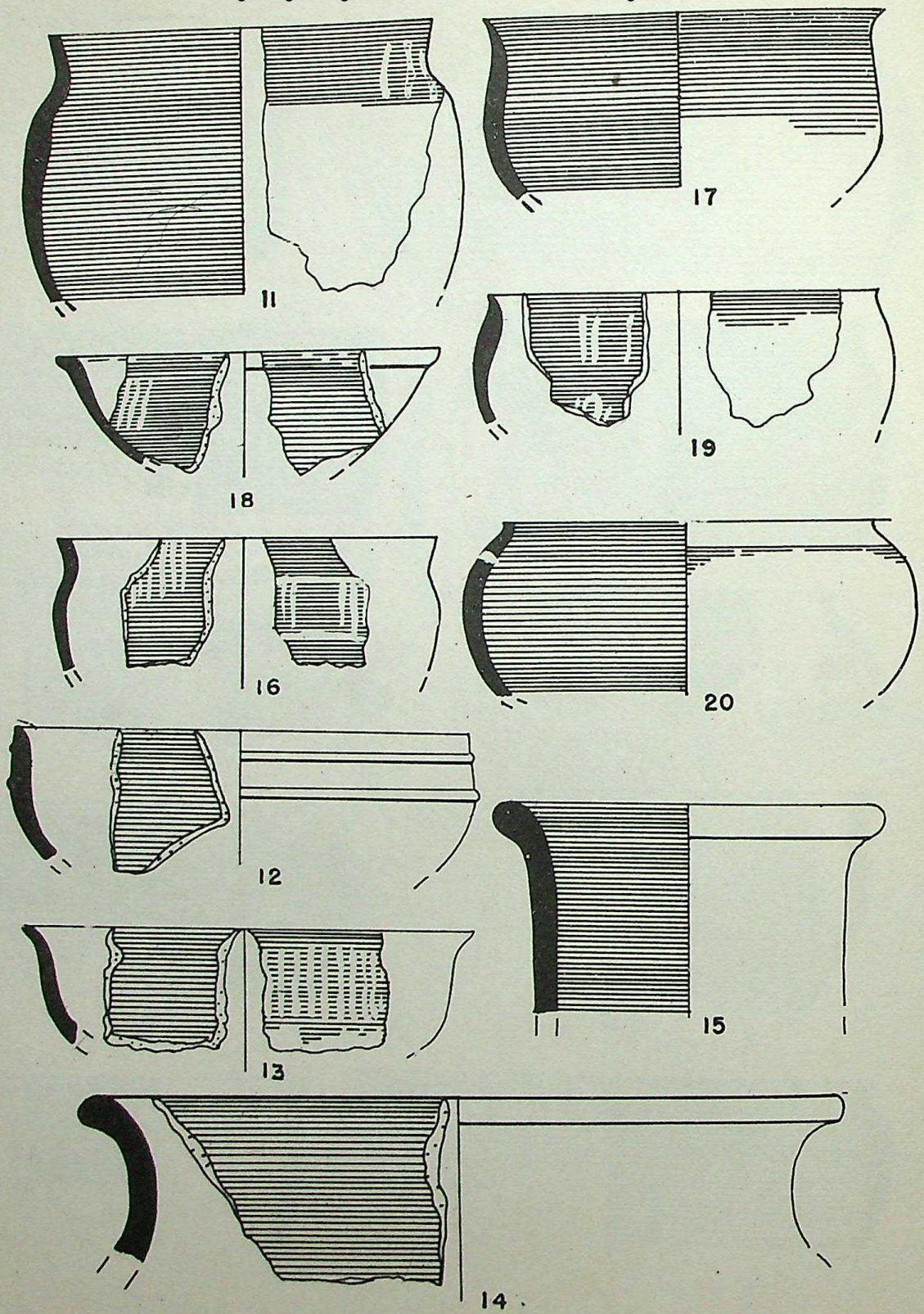

Fig. 24. **Black-and-Red Ware from other Sites in South-eastern Rajasthan.**

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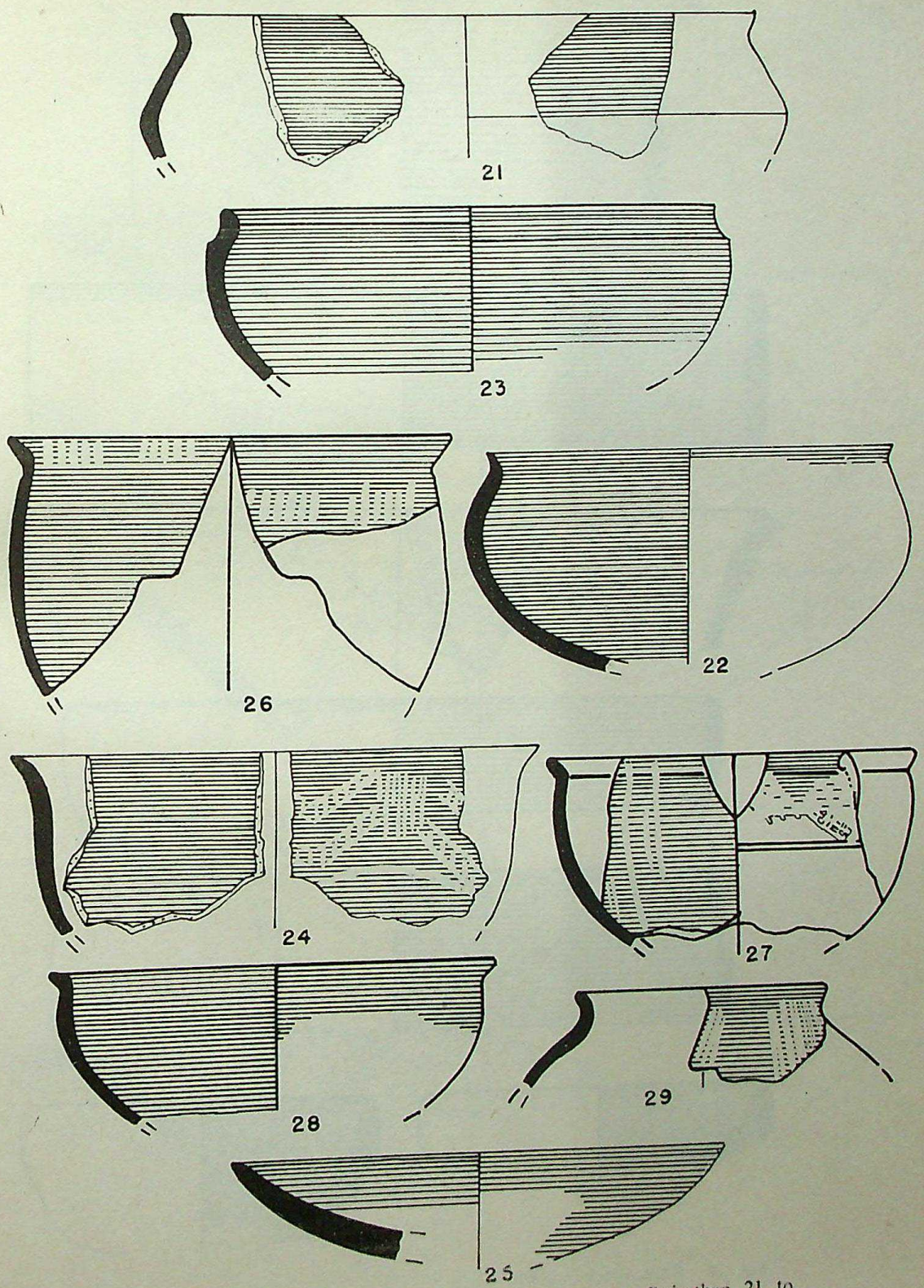

Fig 25. Black-and-Red Ware from other sites in South-eastern Rajasthan 21 to 25, from Gilund, 26 to 29.

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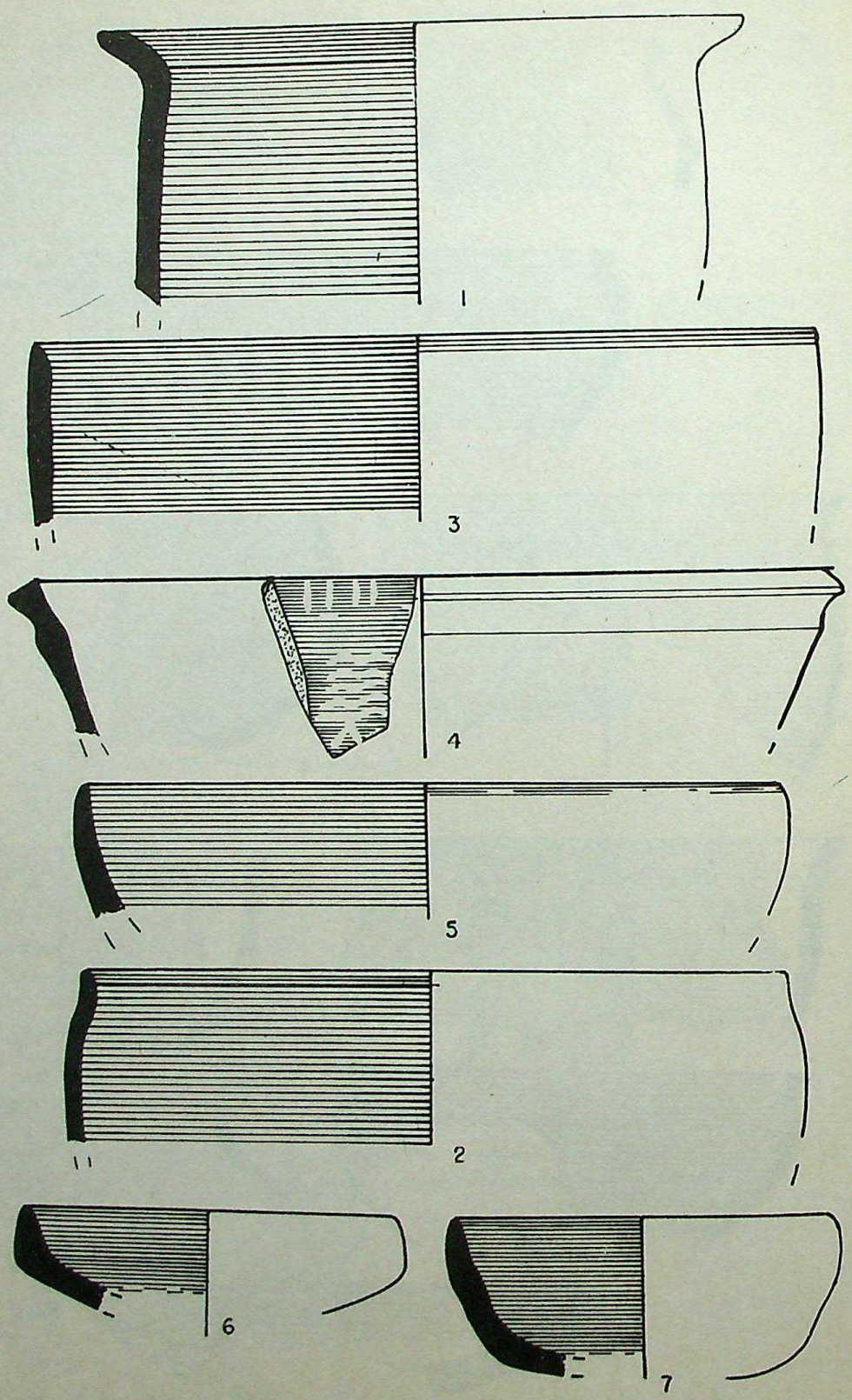

Fig. 26. Eran, Black-and-Red Ware.

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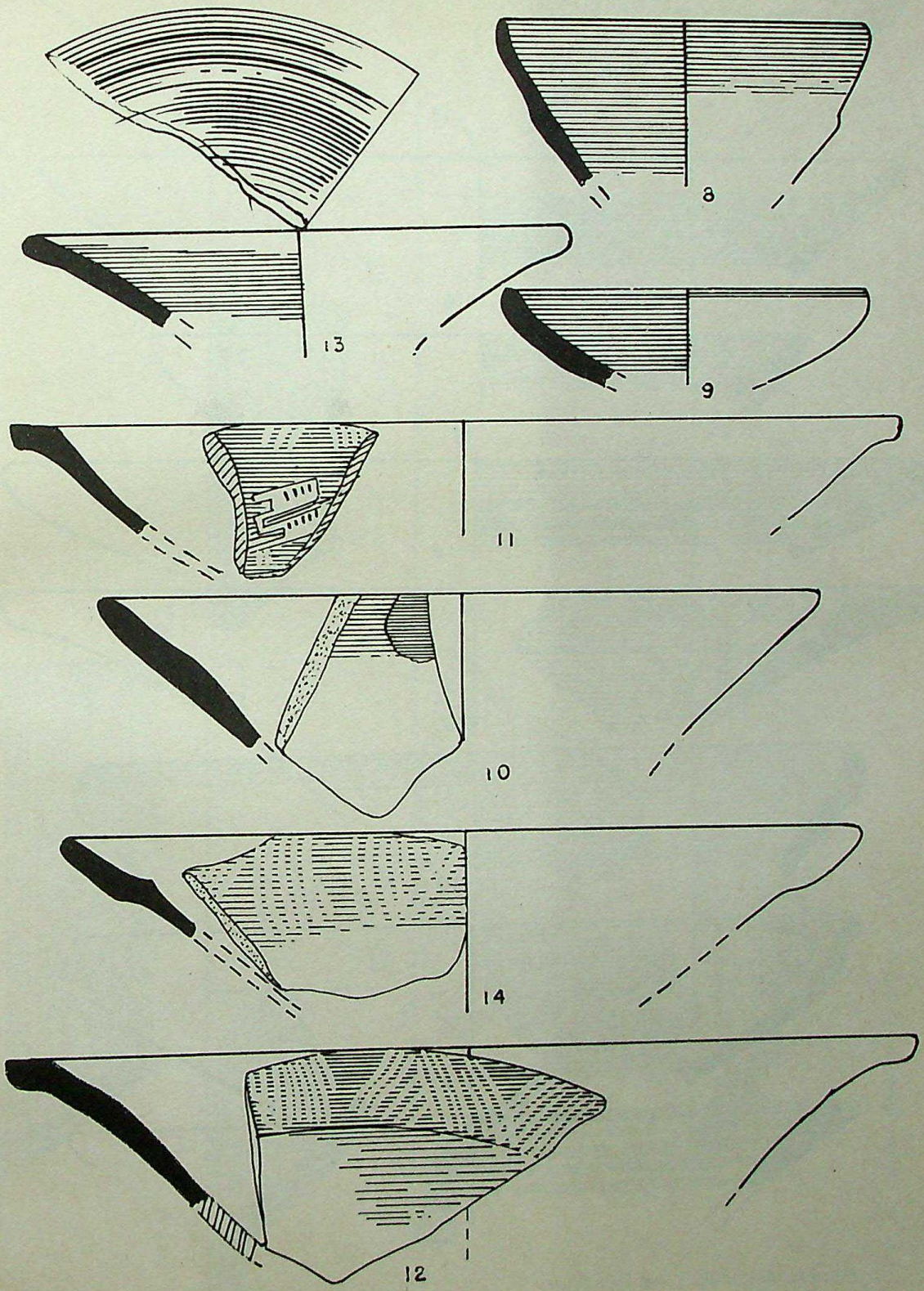
Fig. 27. Early Black-and-Red Ware.



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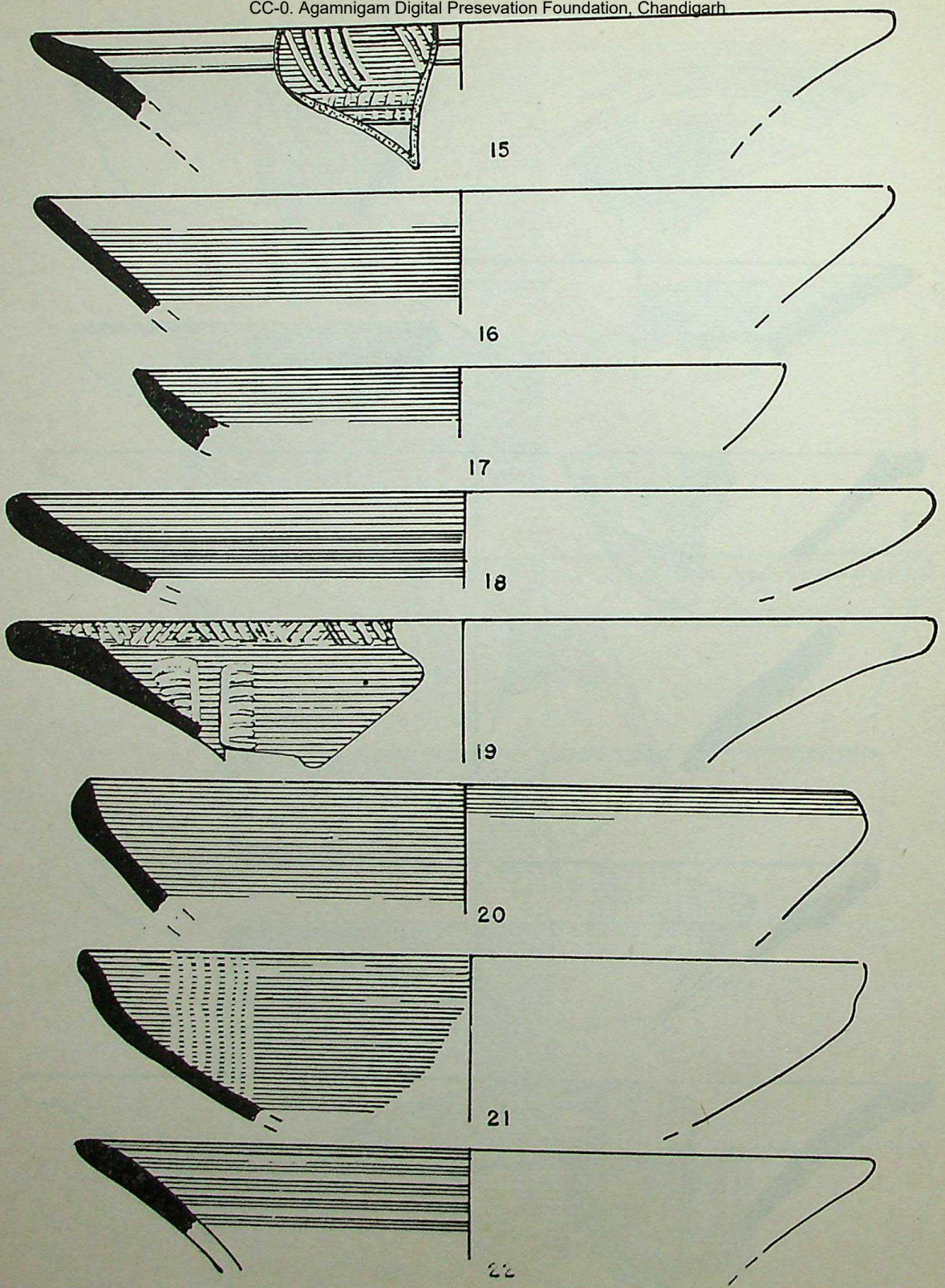

Fig. 28. Eran. Black-and-Red Ware.

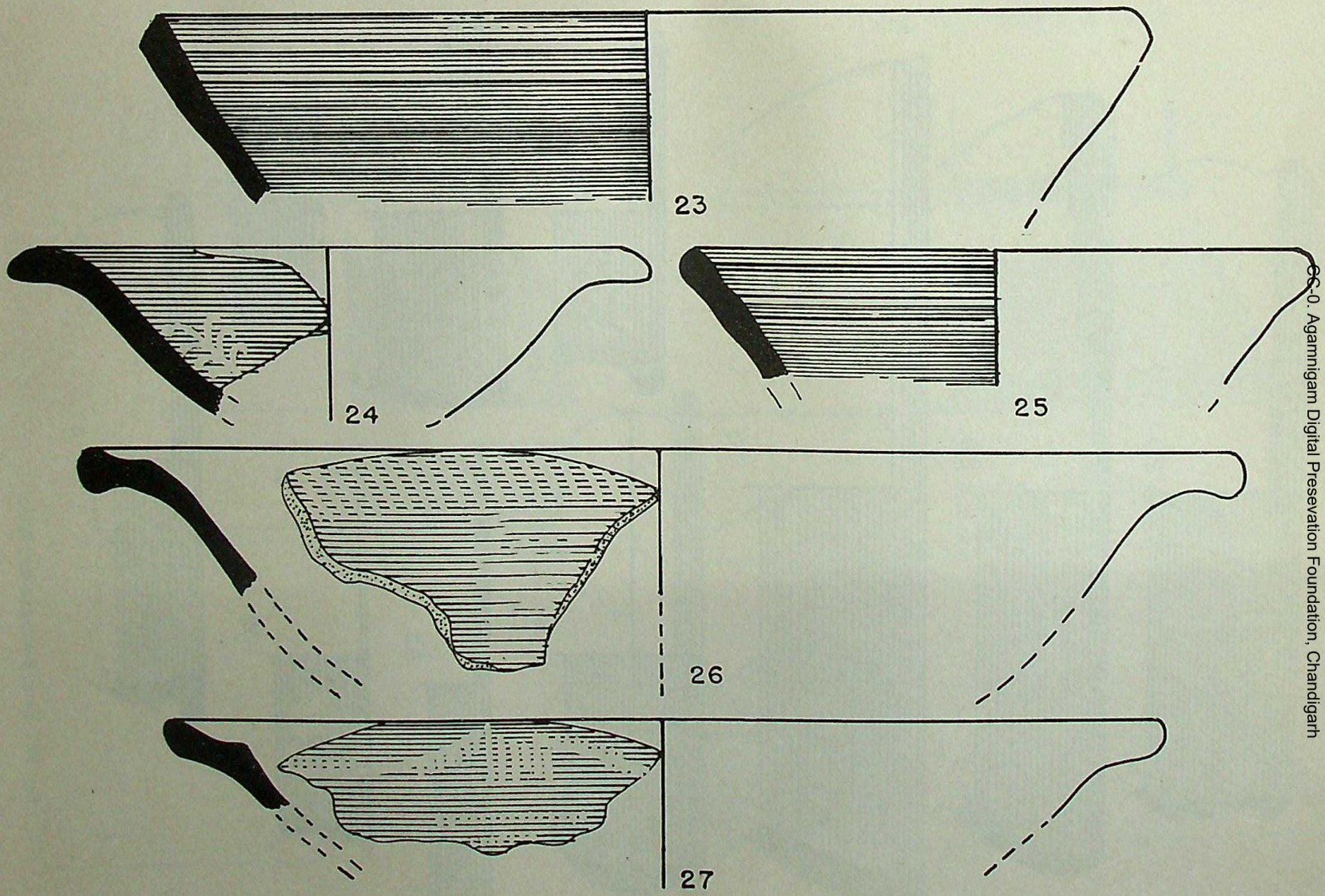

Fig. 29. Eran, Black-and-Red Ware.

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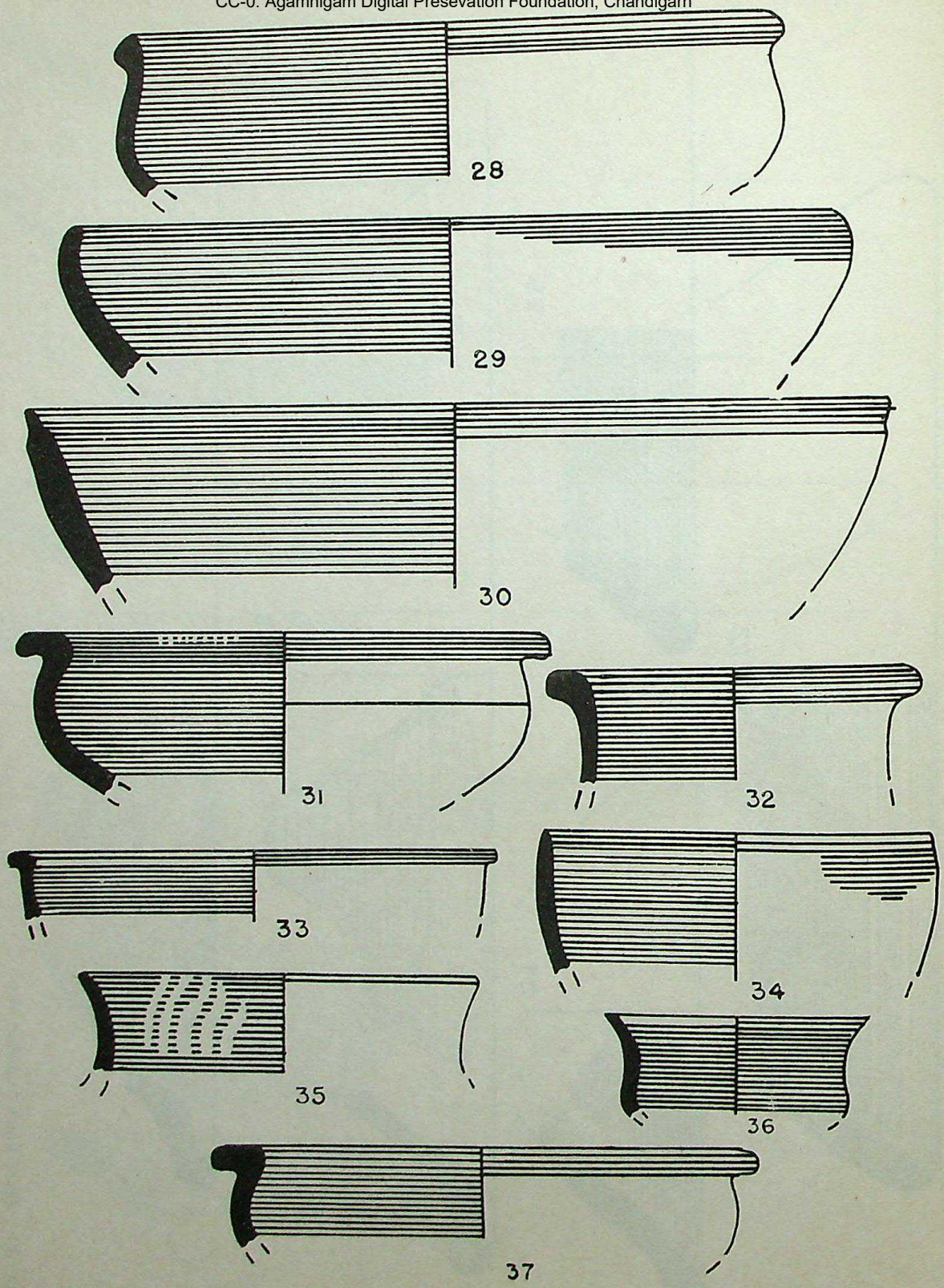

Fig. 30. **Eran, Black-and-Red Ware.**

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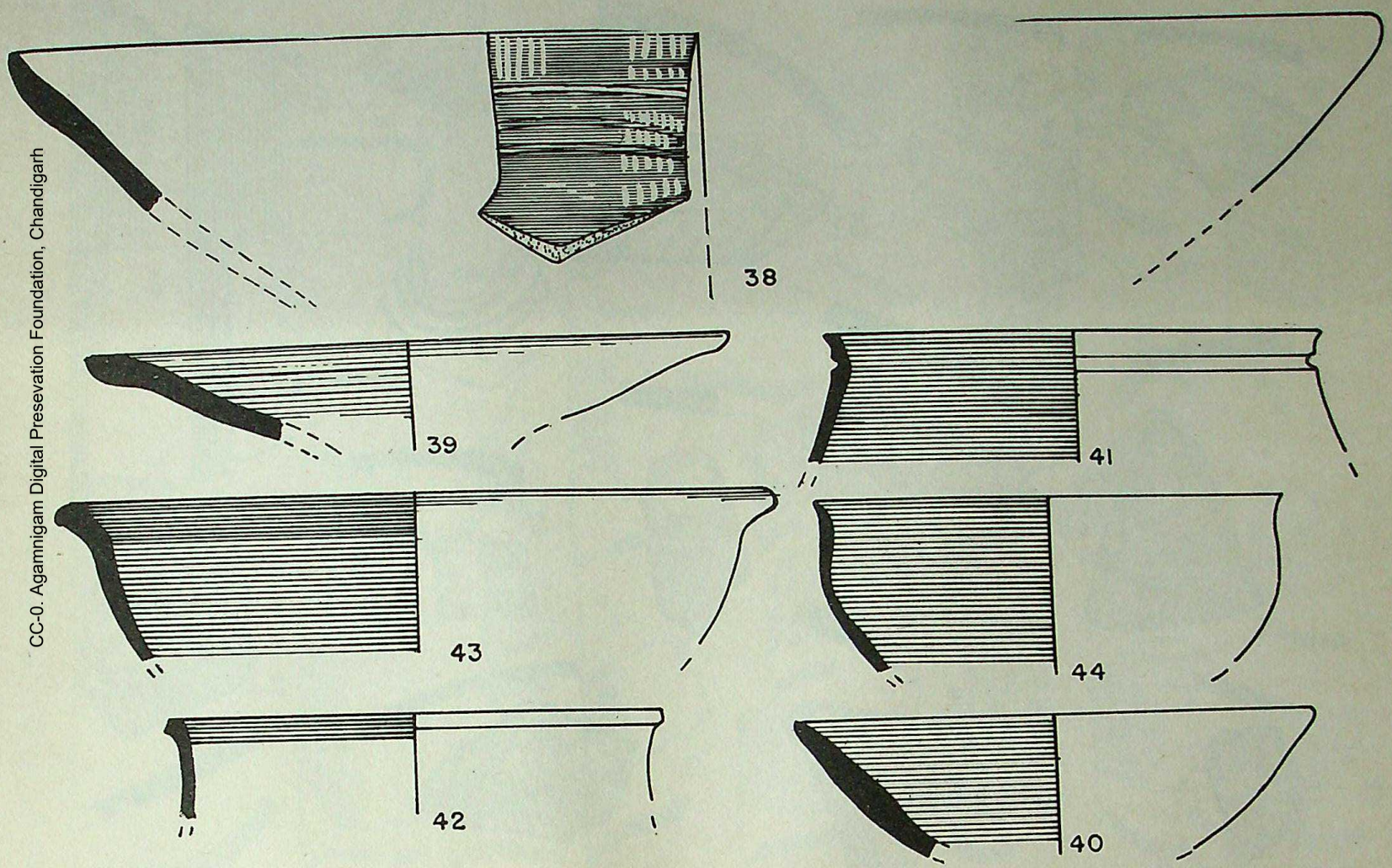

Fig. 31. Eran, Black-and-Red Ware.

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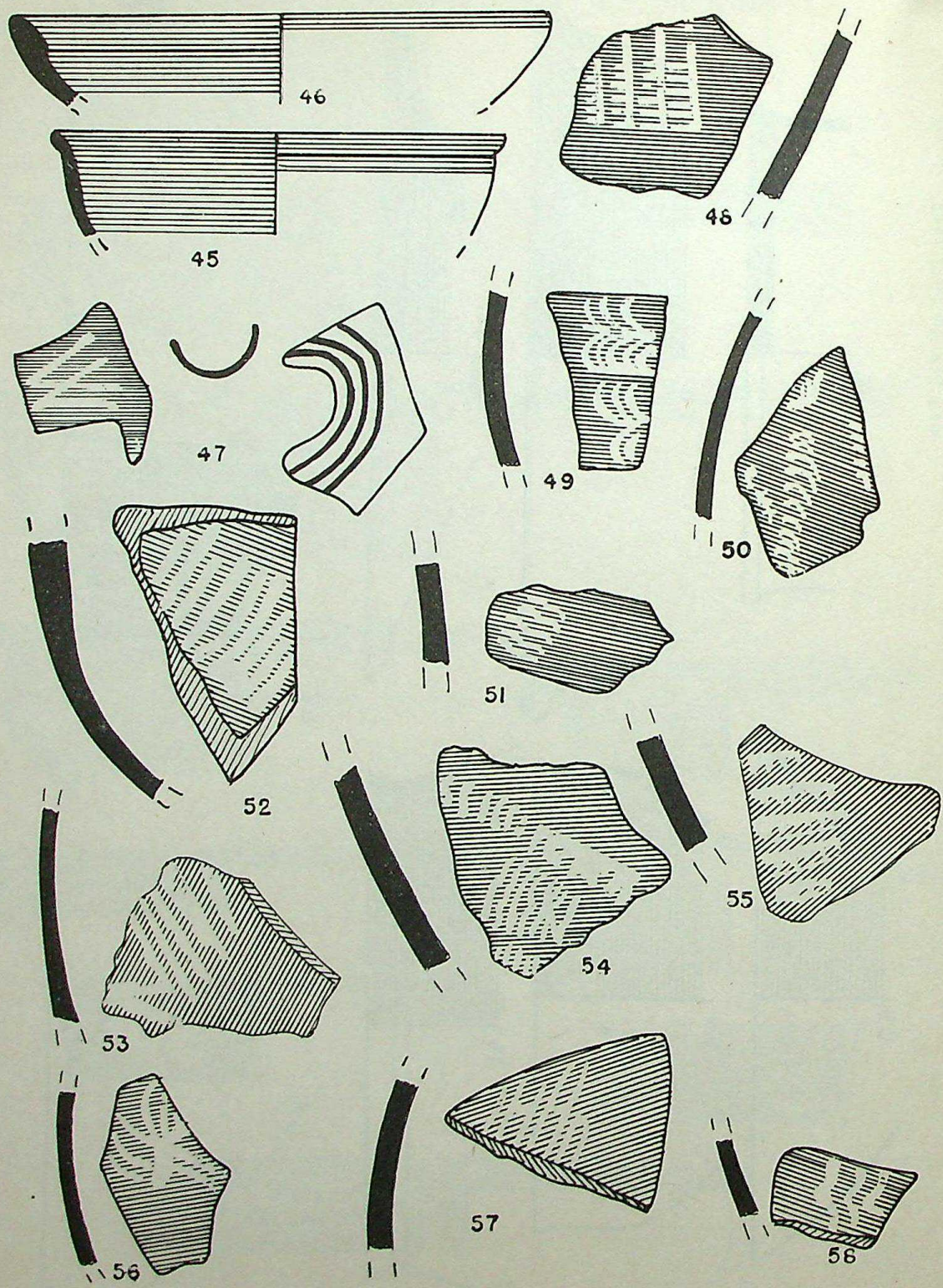

Fig. 32. Eran, Black-and-Red Ware.

Fig. 33. Navdatoli Phase I. Black and Red Ware.

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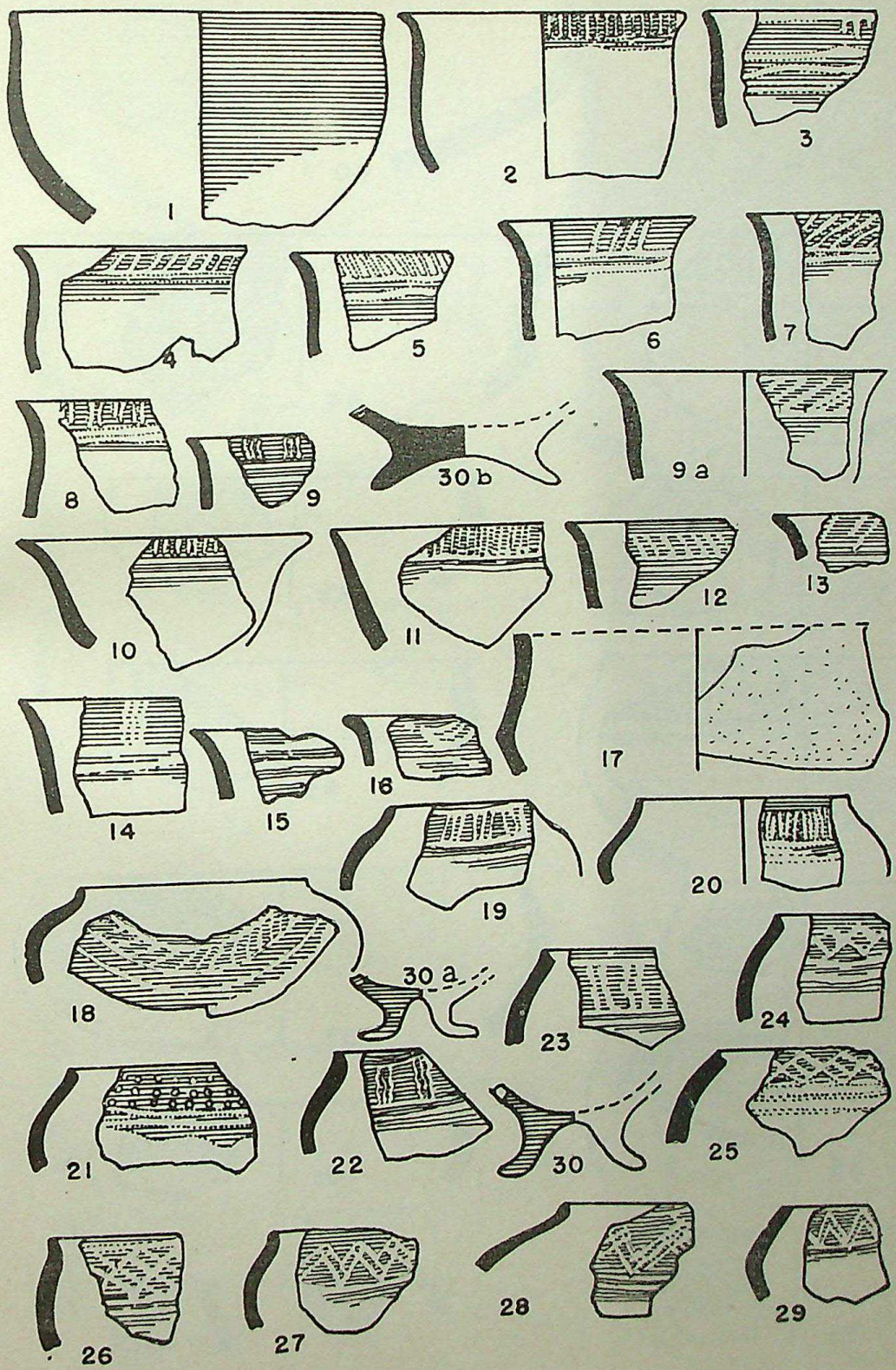


CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

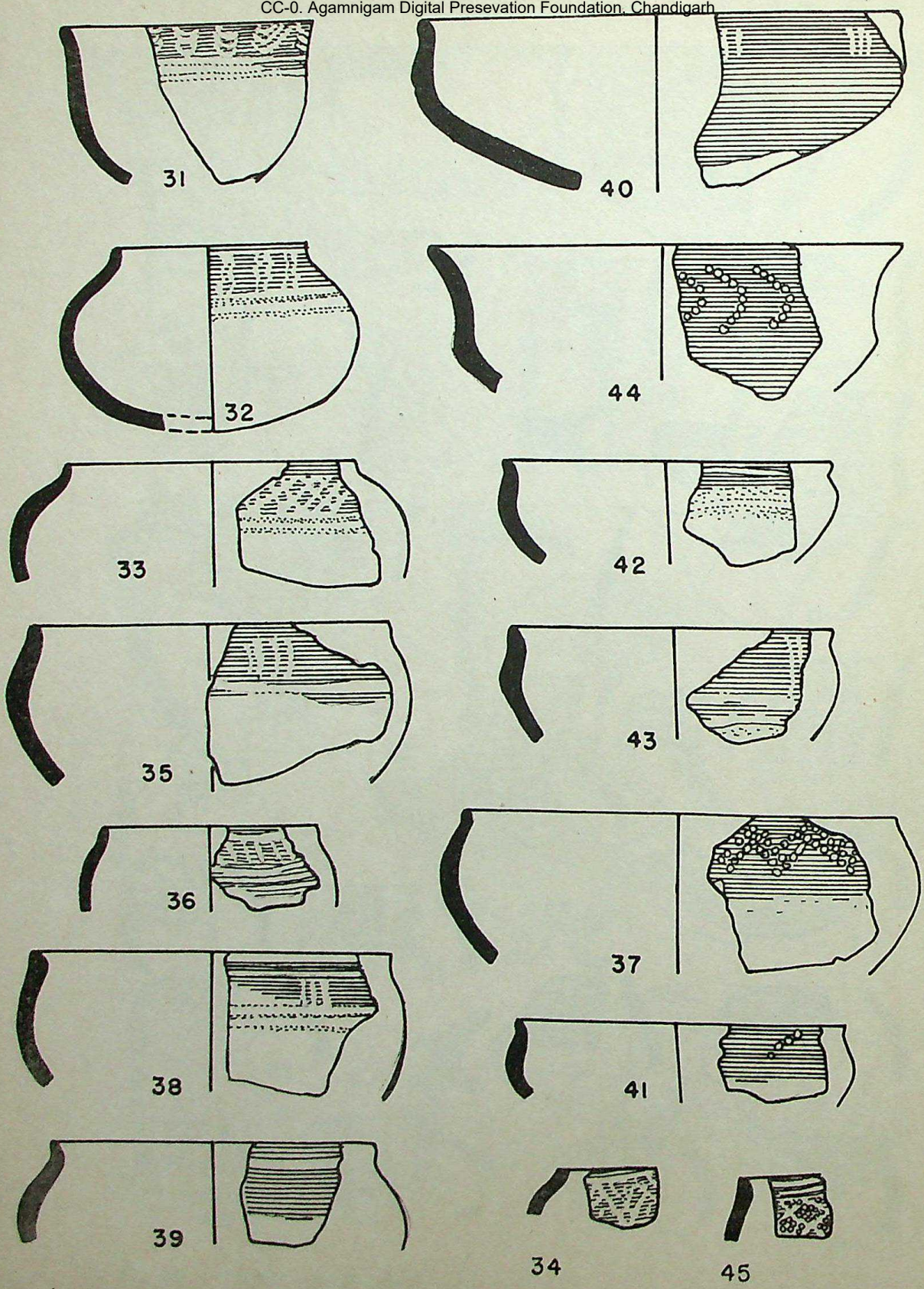
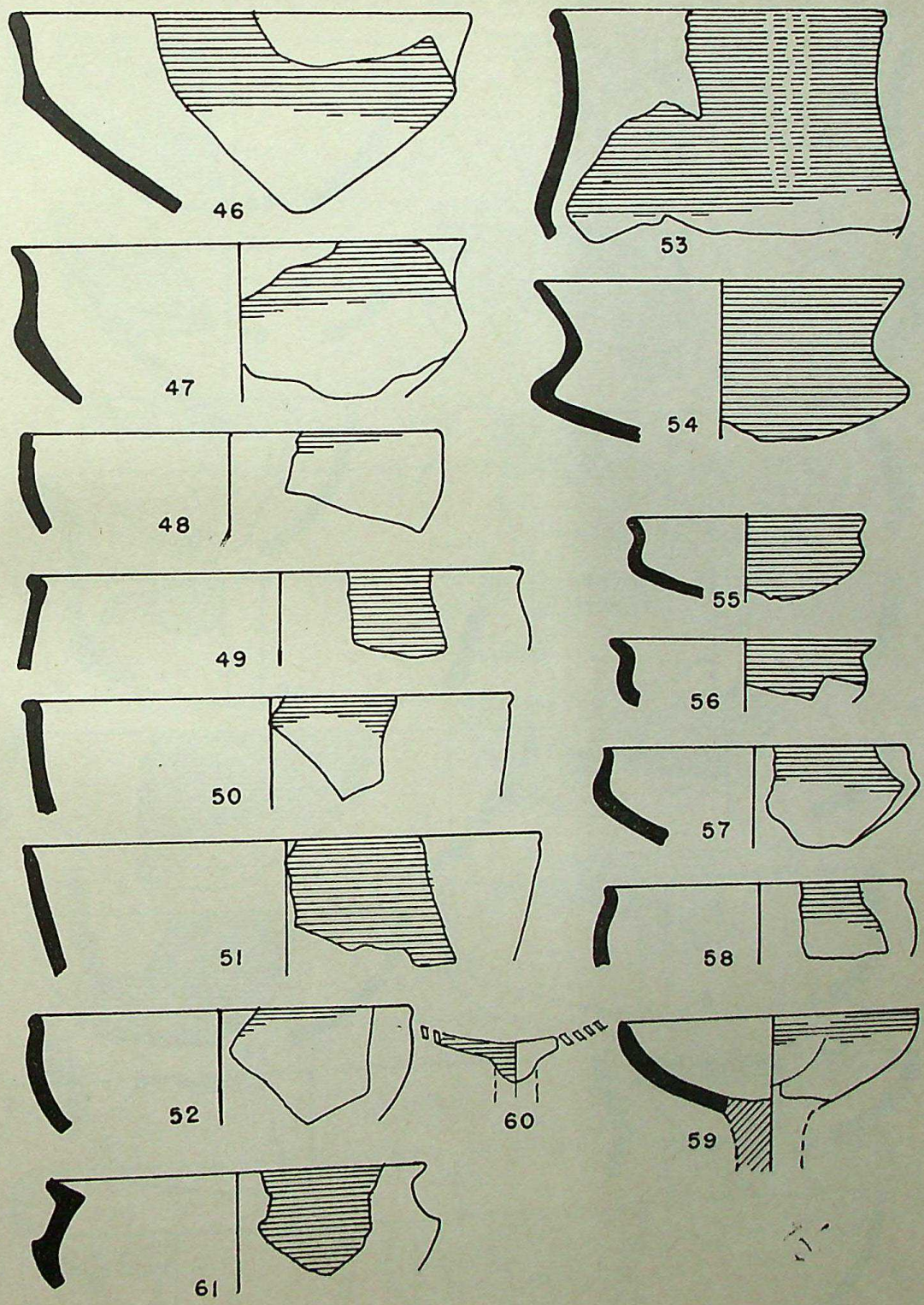


Fig. 34. Navdatoli Phase II, Black-and-Red Ware.

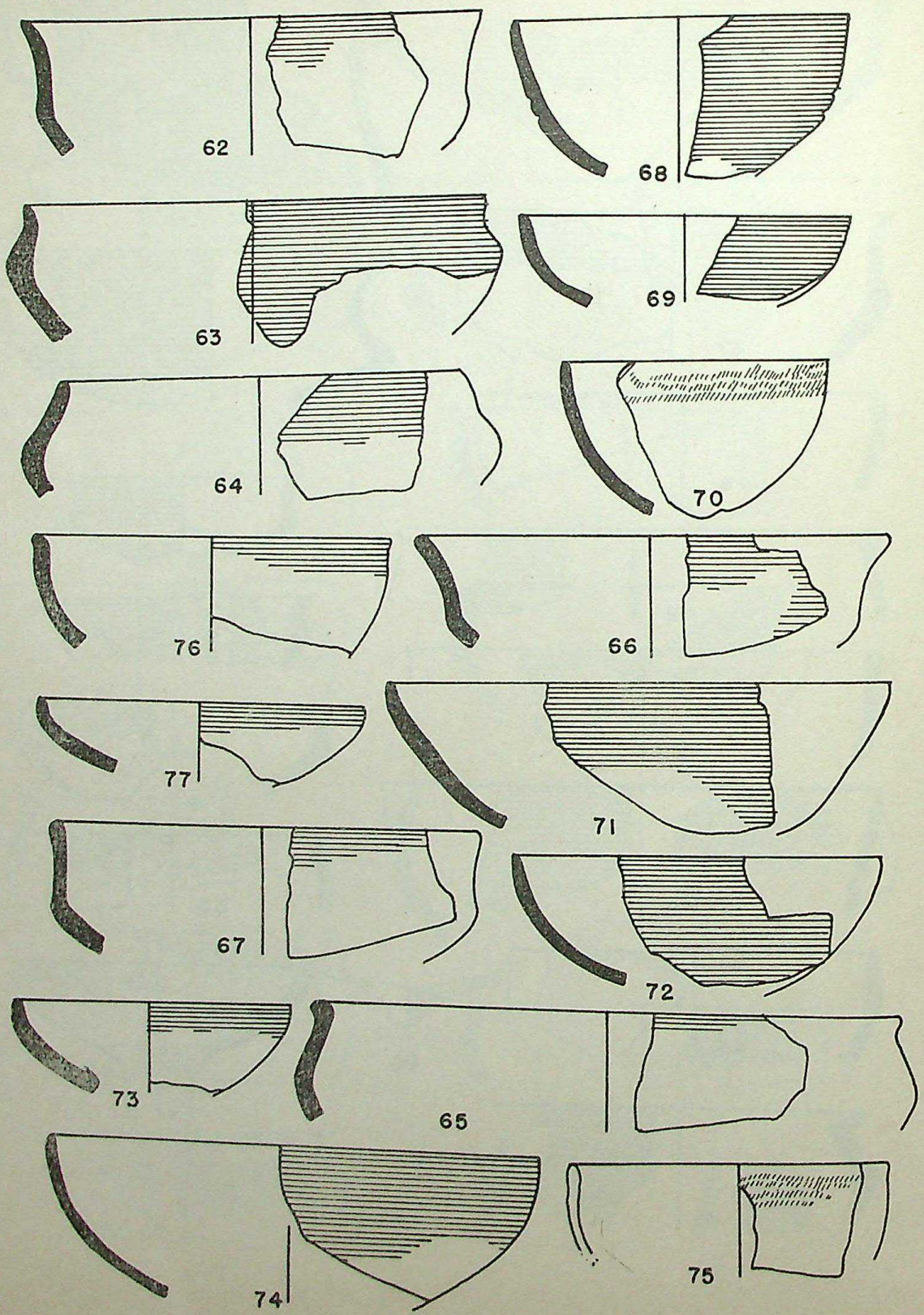
CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Fig 35. Navdatoli Phase III, Black-and-Red Ware.



CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Fig. 36. Navdatoli Phase IV, Black-and-Red Ware.



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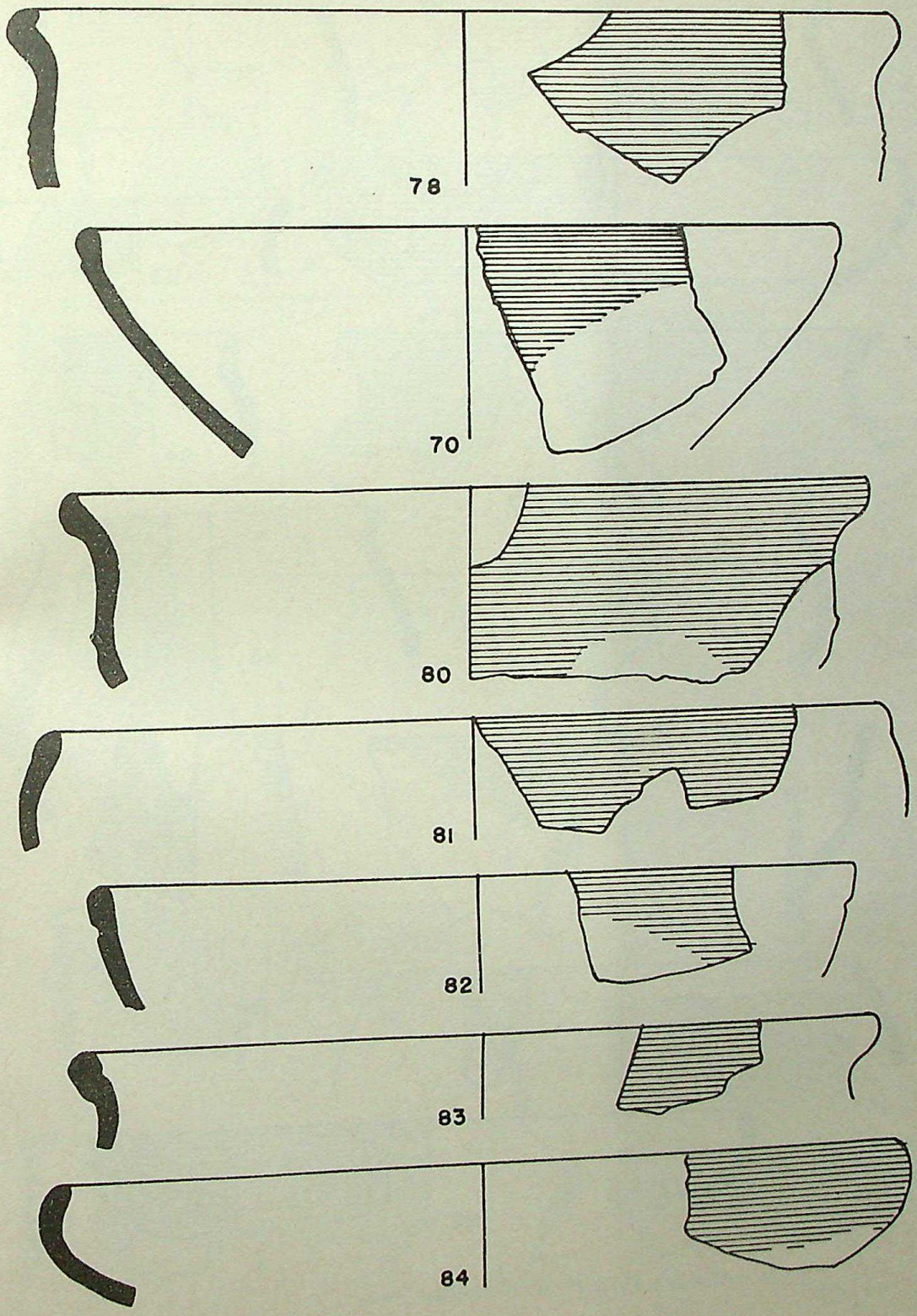

Fig. 37. Navdatoli Phase IV, Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

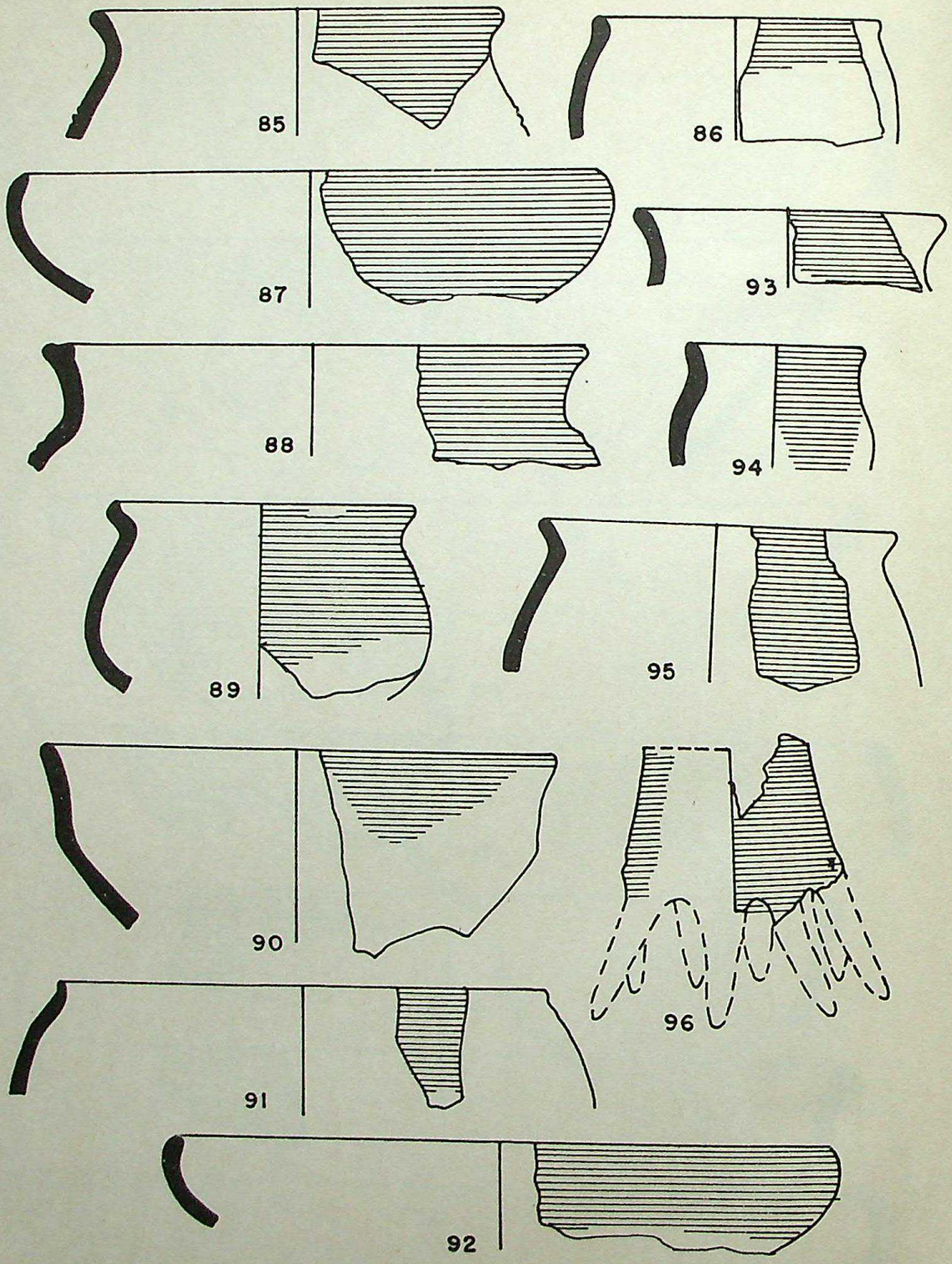

Fig. 38. Navdatoli Phase IV, Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

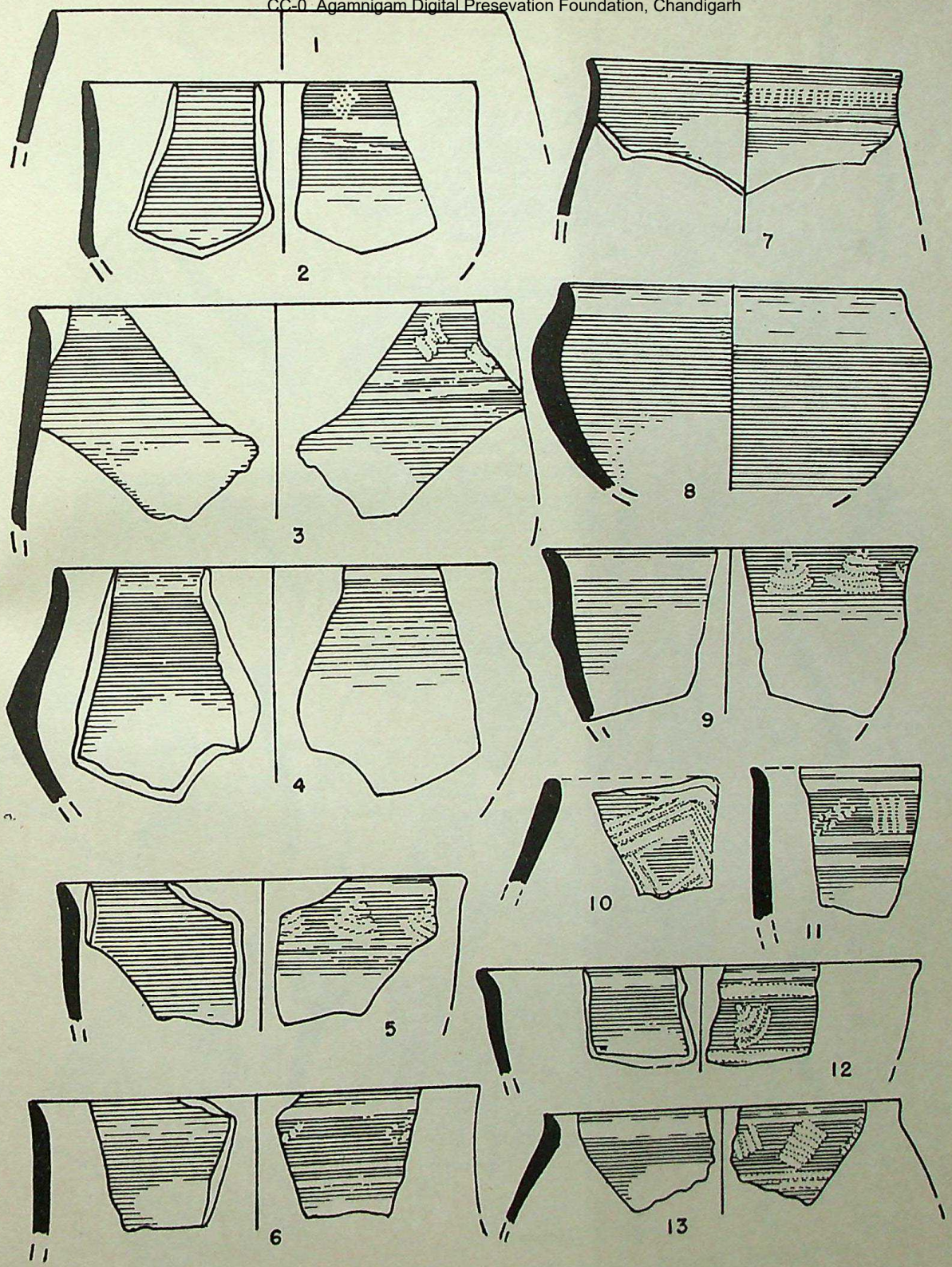

Fig. 39 Kayatha Period II, Black-and-Red Ware.

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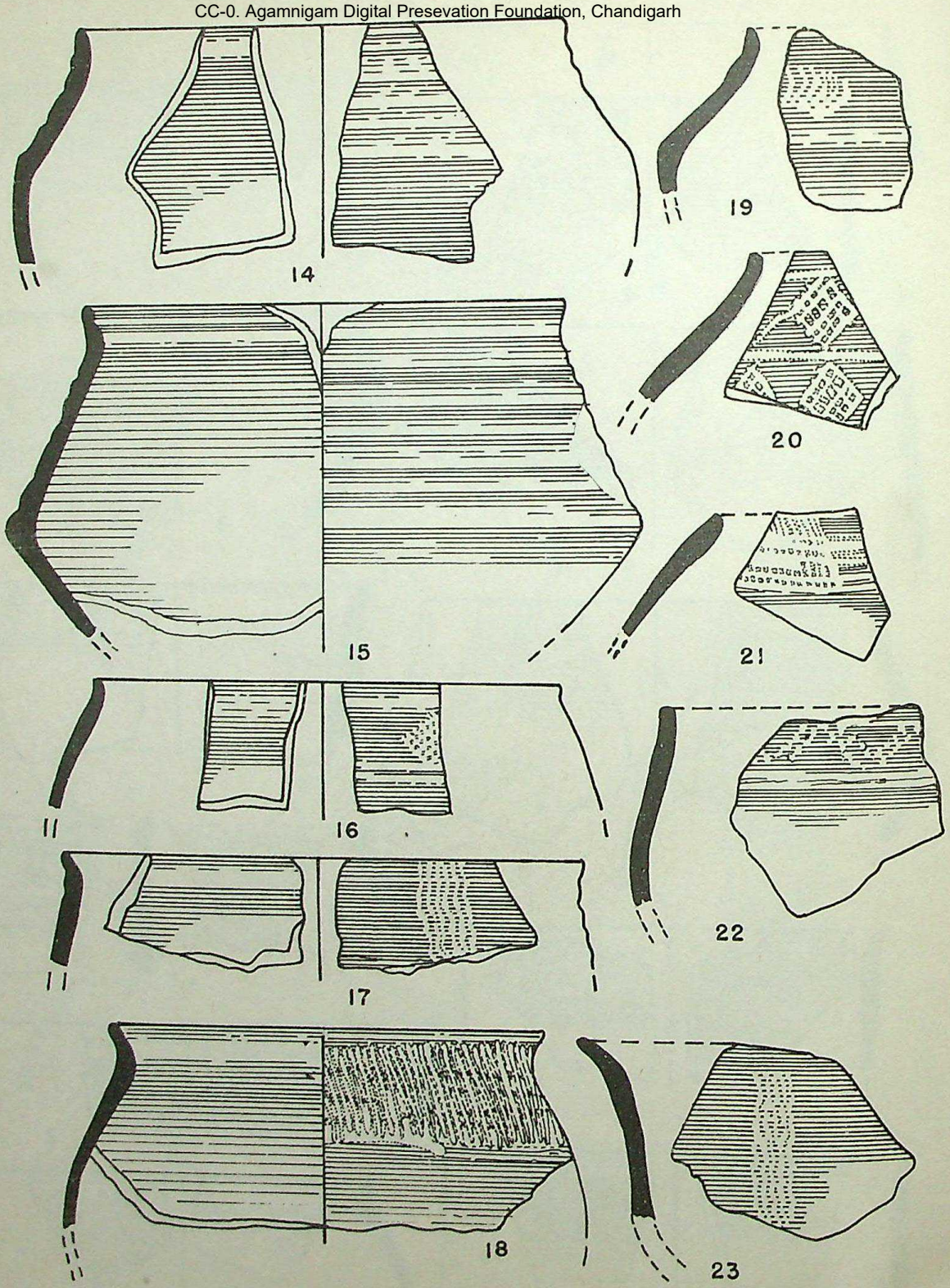

Fig. 40. Kayatha Period II, Black-and-Red Ware.

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Fig. 41. Kayatha Period, 24 to 36 and rest Period II, Black-and-Red Ware.

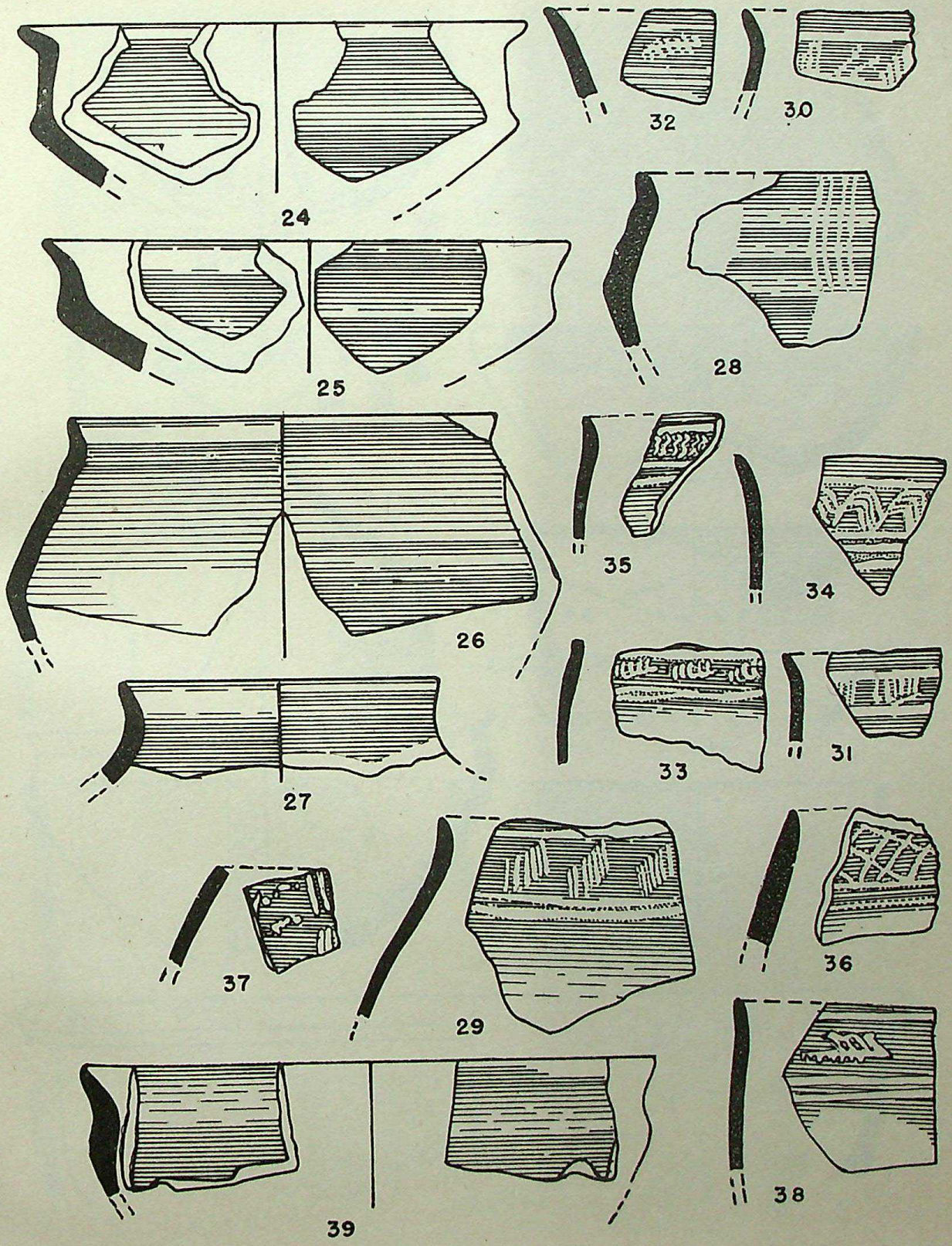

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Fig. 42. Kayatha period III, 40 to 45, Nagda, 46 to 49 Black-and-Red Ware.

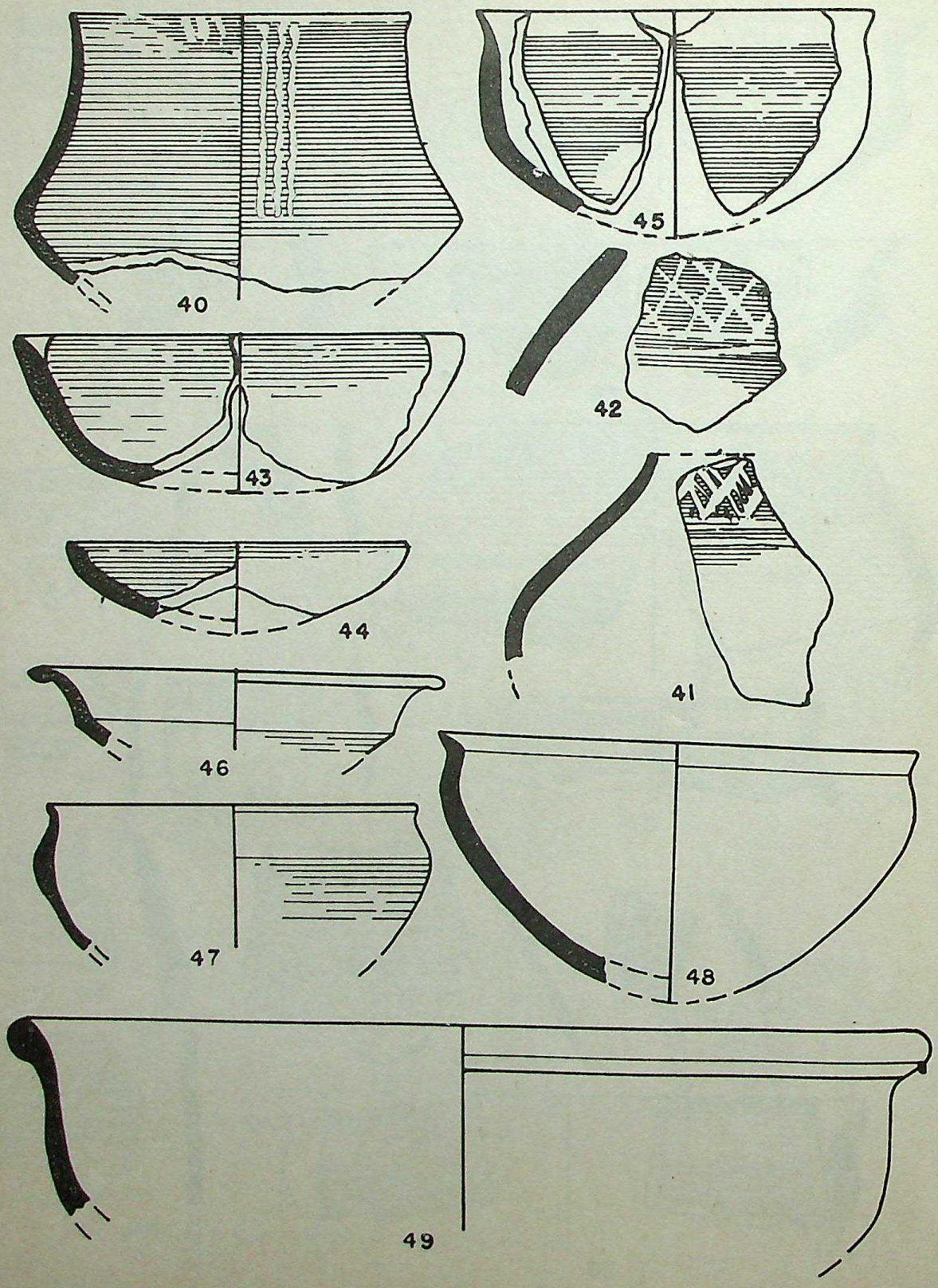

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Fig. 43. Ujjain, 1 to 5, Avra 6 to 13, Black-and-Red Ware.

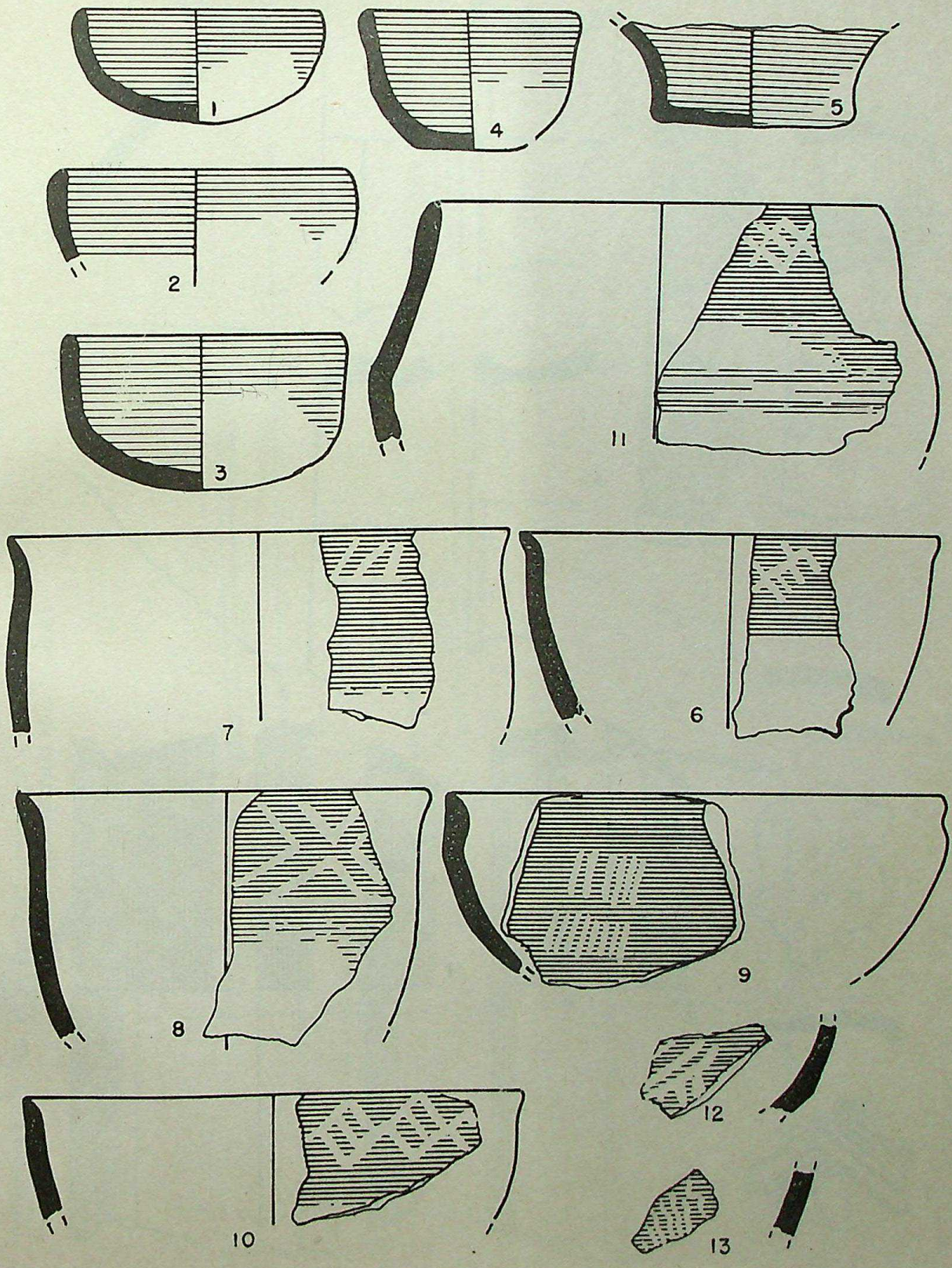
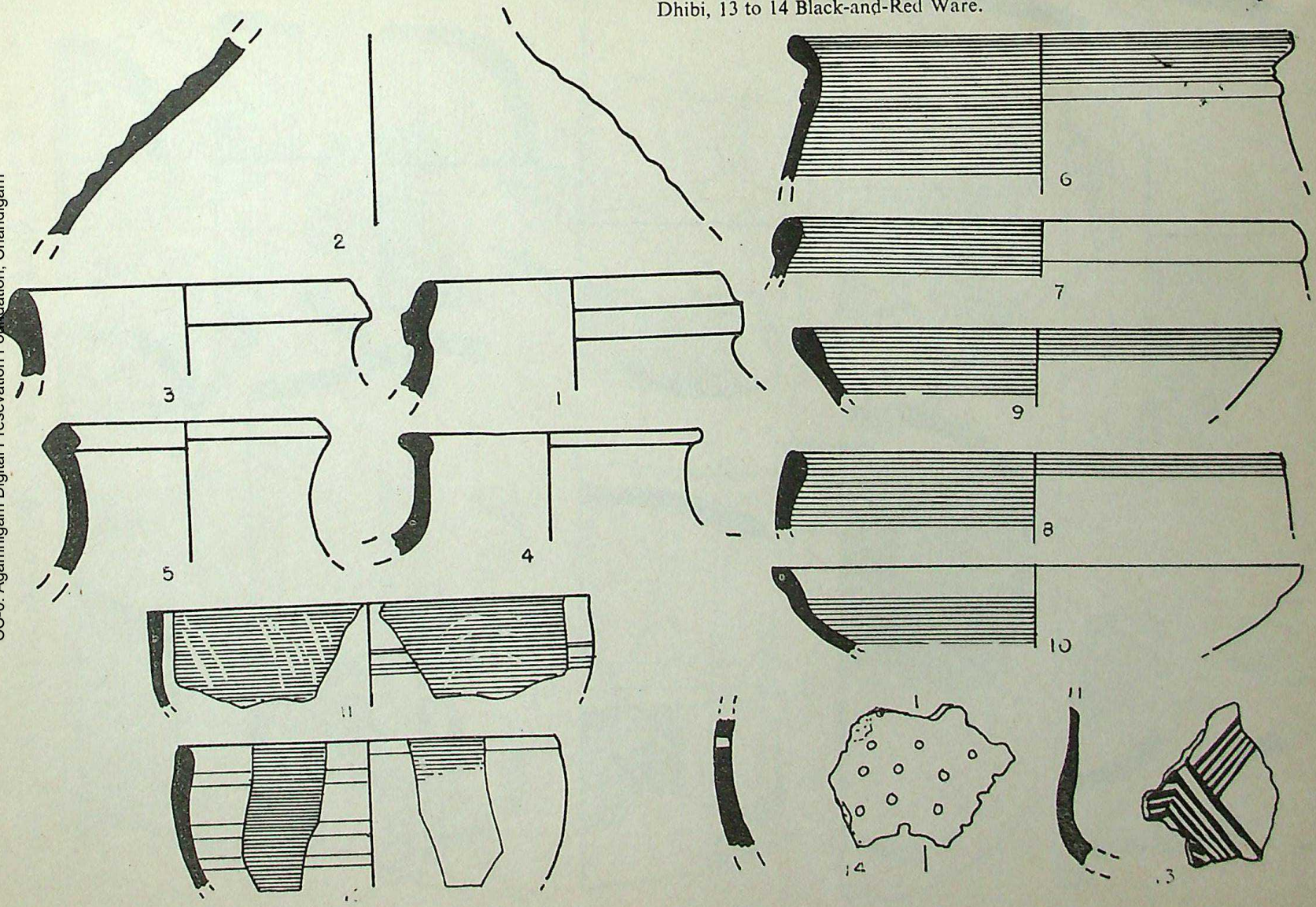


Fig. 44. Kausambi, 1 to 5; Rajghat 6 to 10; Sohgaura 11 and 12; Pandu-Rajar-Dhibi, 13 to 14 Black-and-Red Ware.



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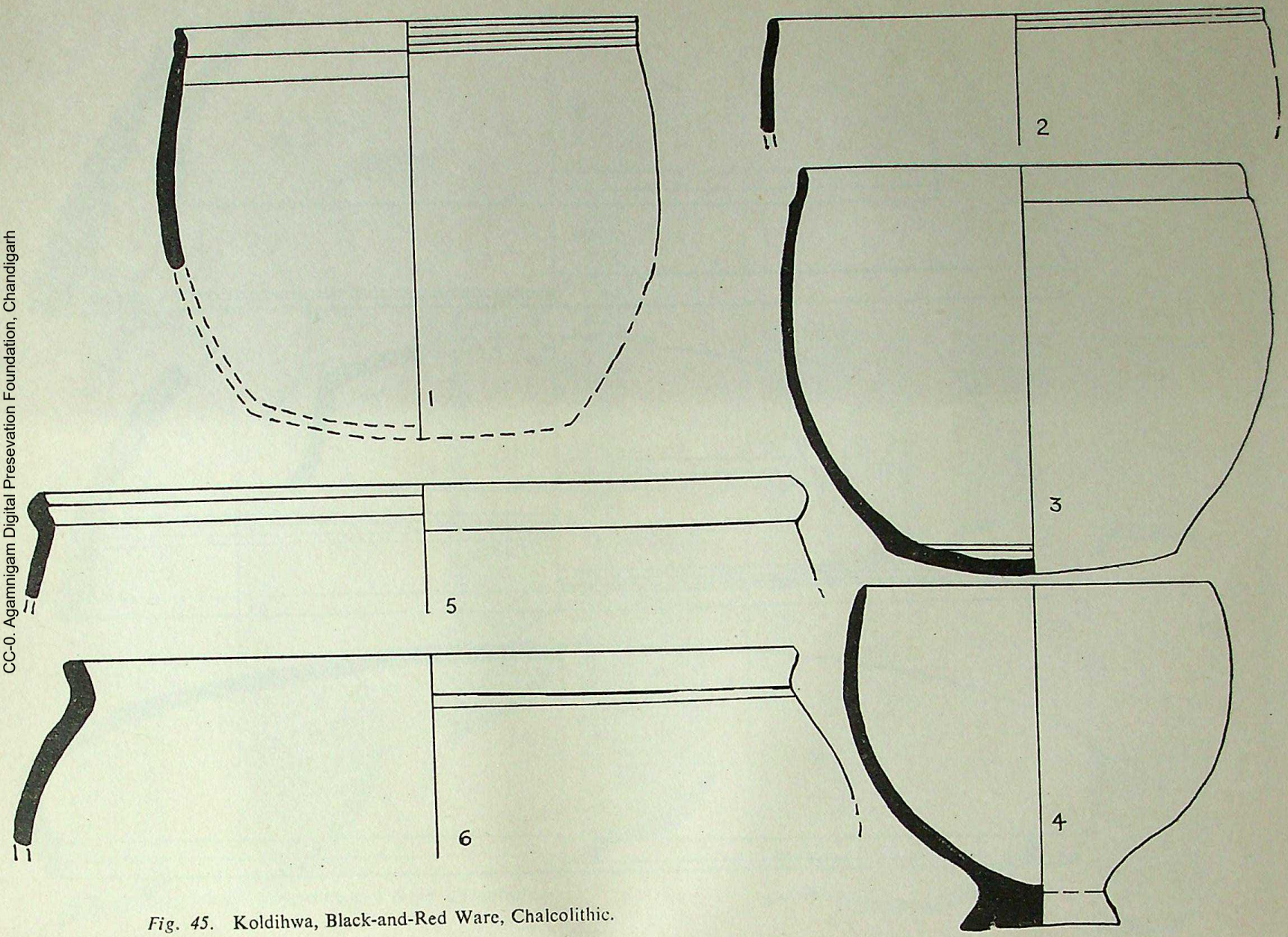
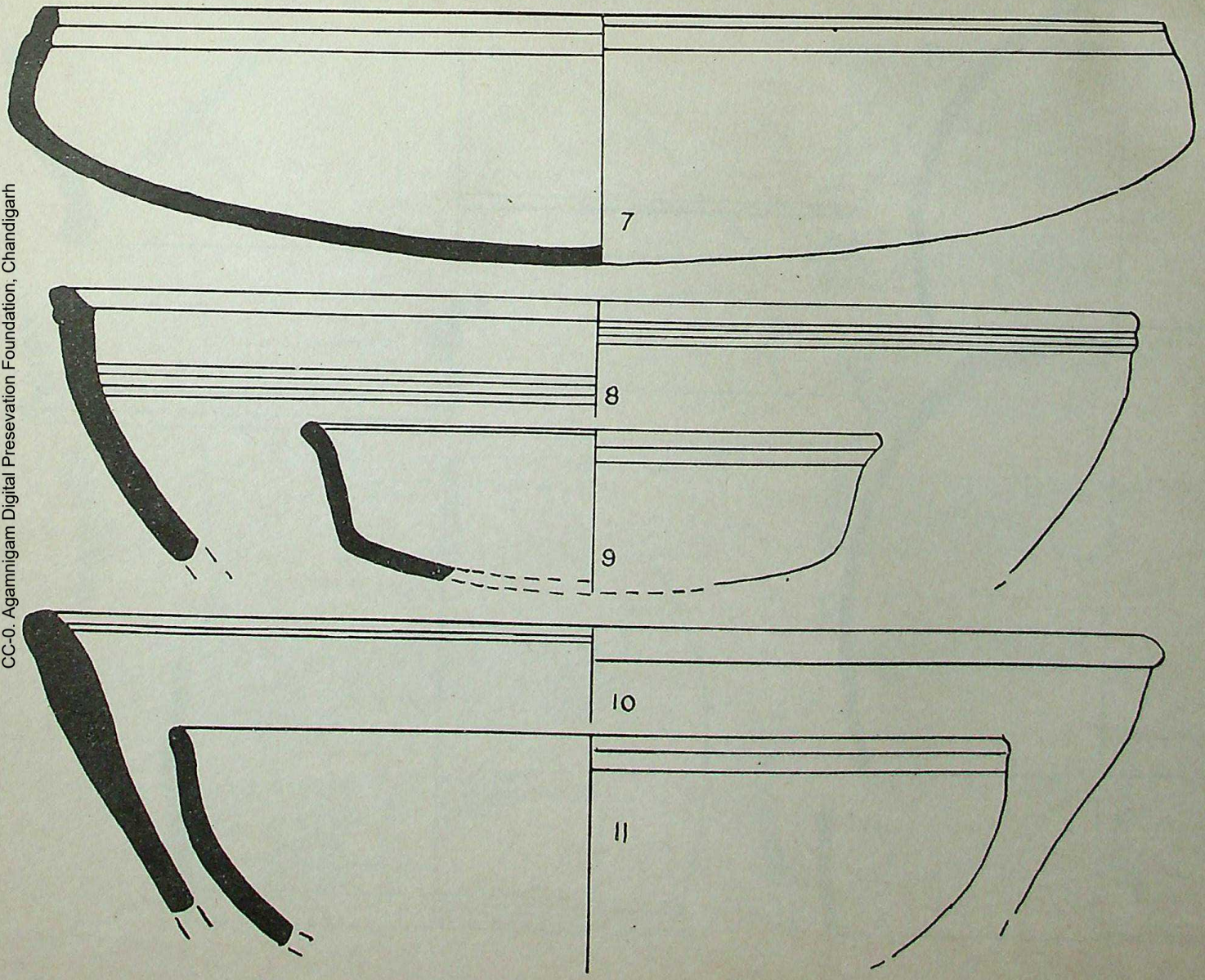


Fig. 45. Koldihwa, Black-and-Red Ware, Chalcolithic.

Fig. 46. Koldihwa, Black-and-Red Ware, Chalcolithic.



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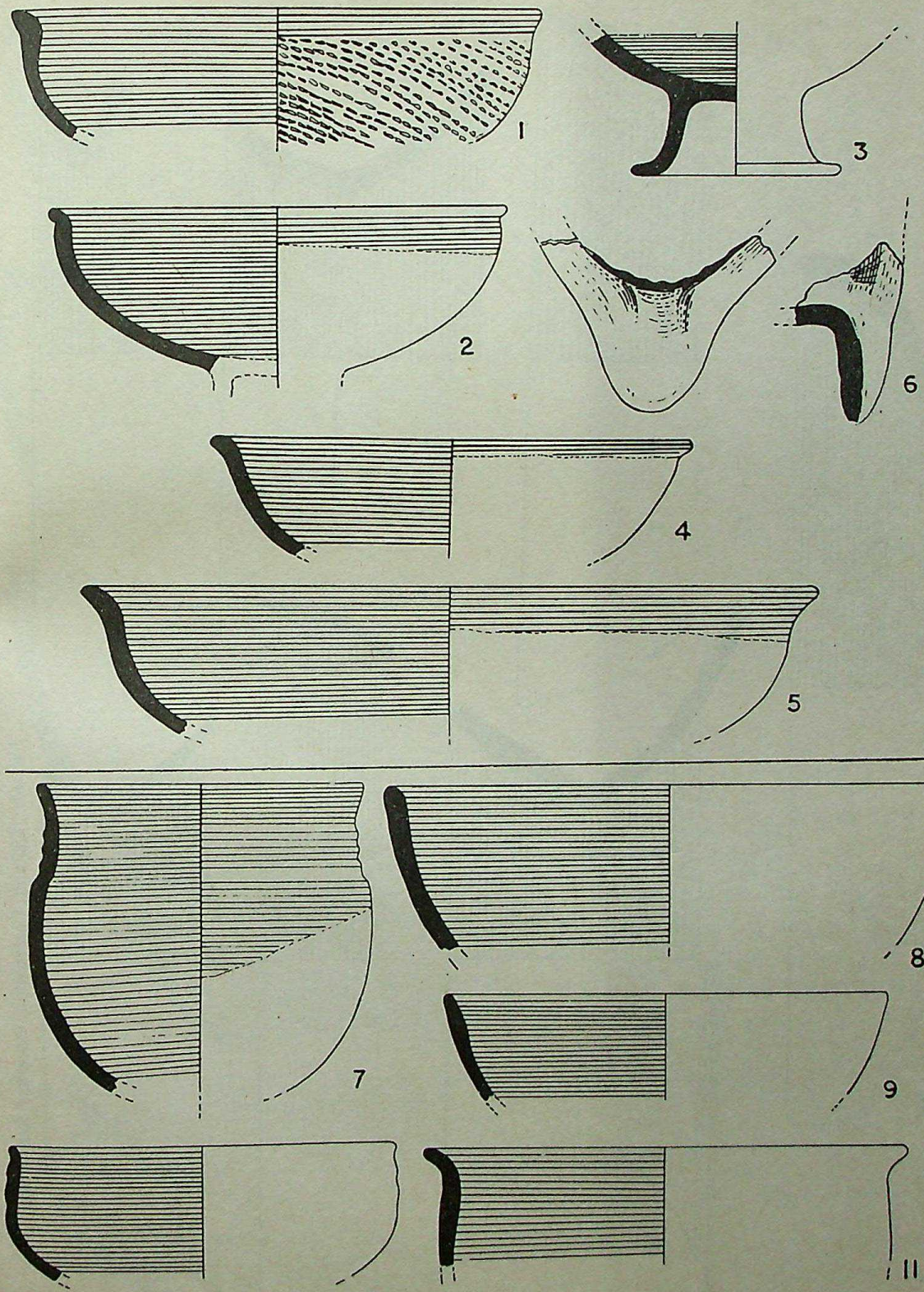
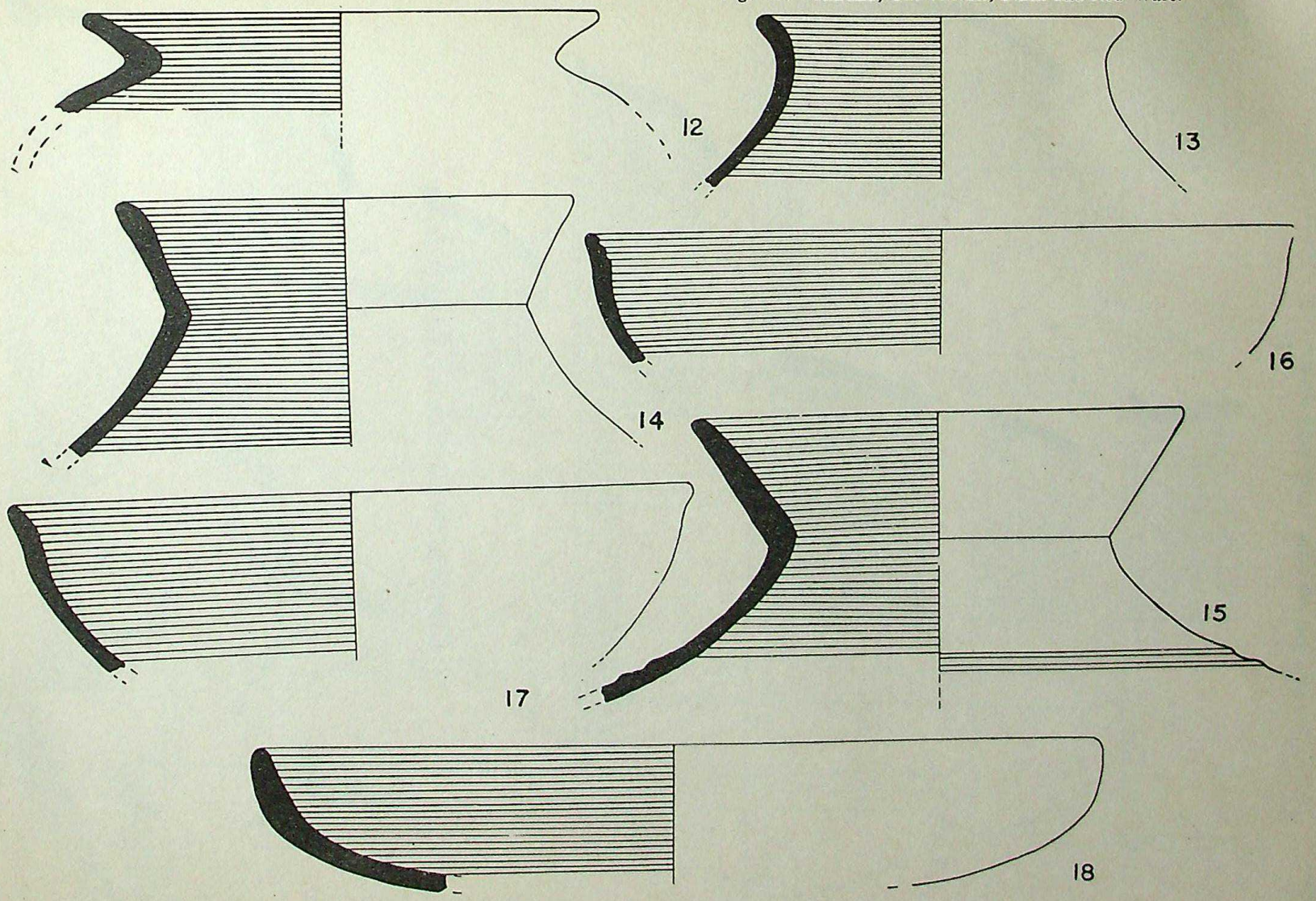


Fig. 47. Chirand, Neolithic, 1 to 16 and rest Chalcolithic, Black-and-Red Ware.

Fig. 48. Chirand, Chalcolithic, Black-and-Red Ware.



CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

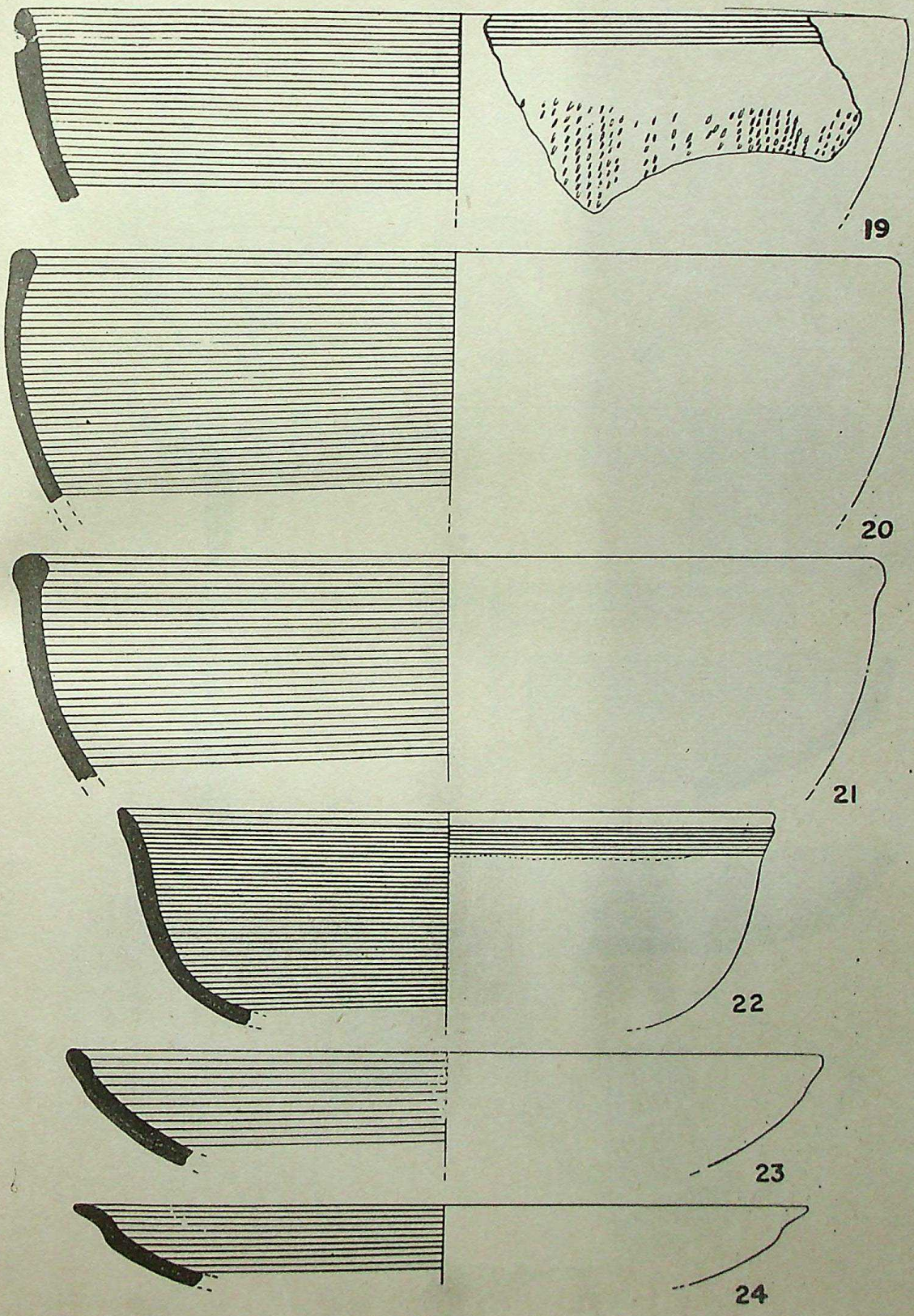


Fig. 49. Chirand, Chalcolithic, Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

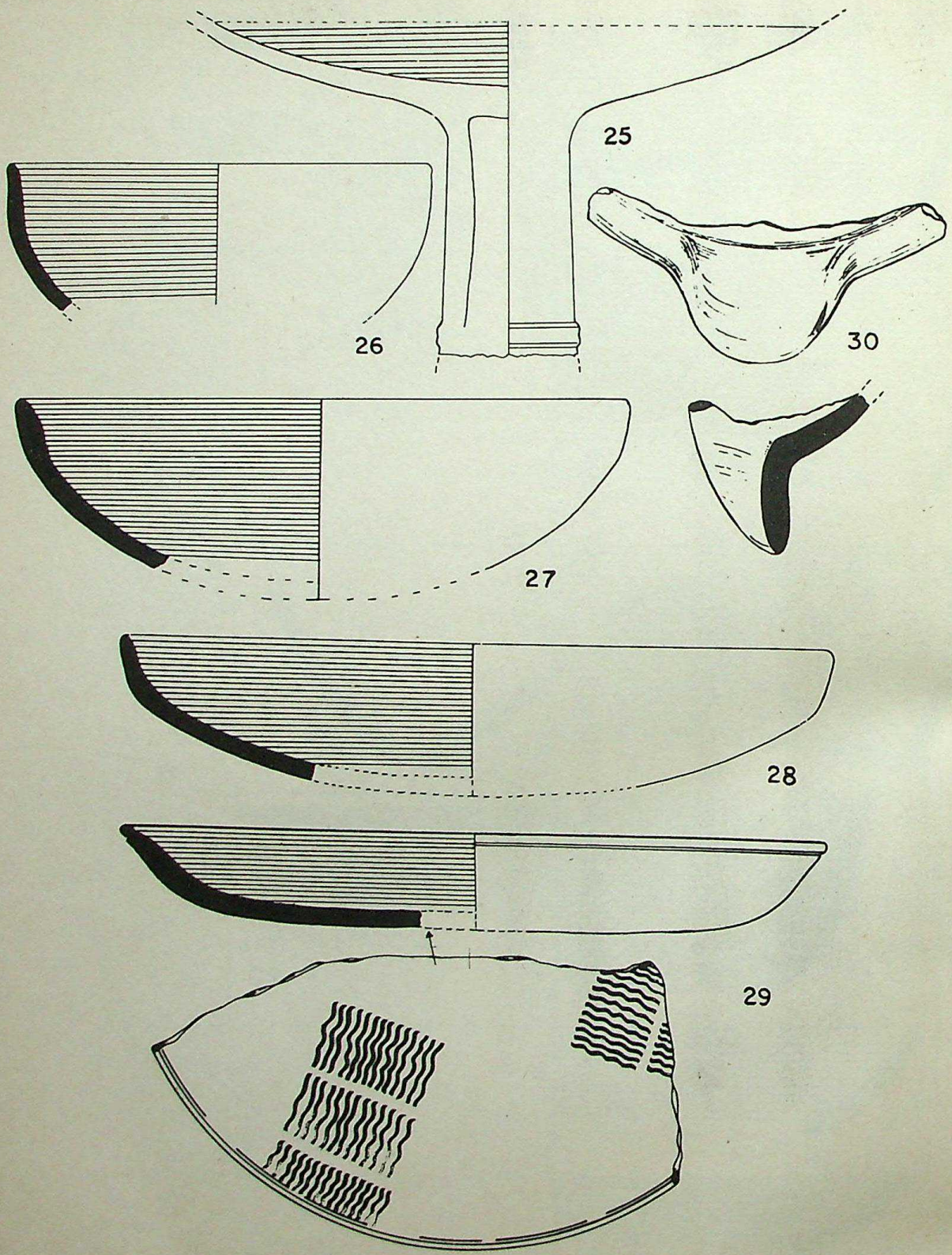


Fig. 50. Chirand, Chalcolithic, Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

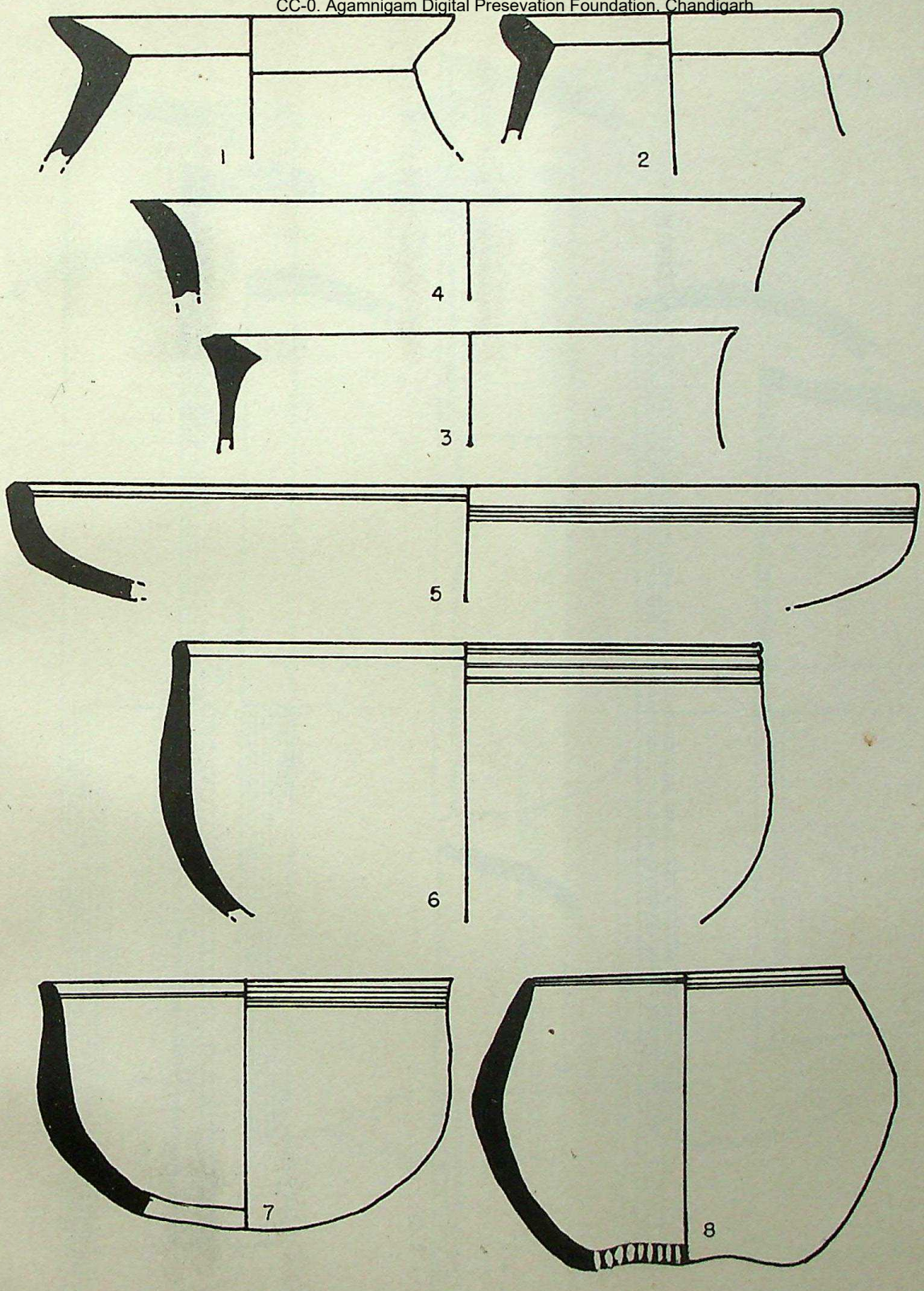


Fig. 51. Sonpur IA, Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

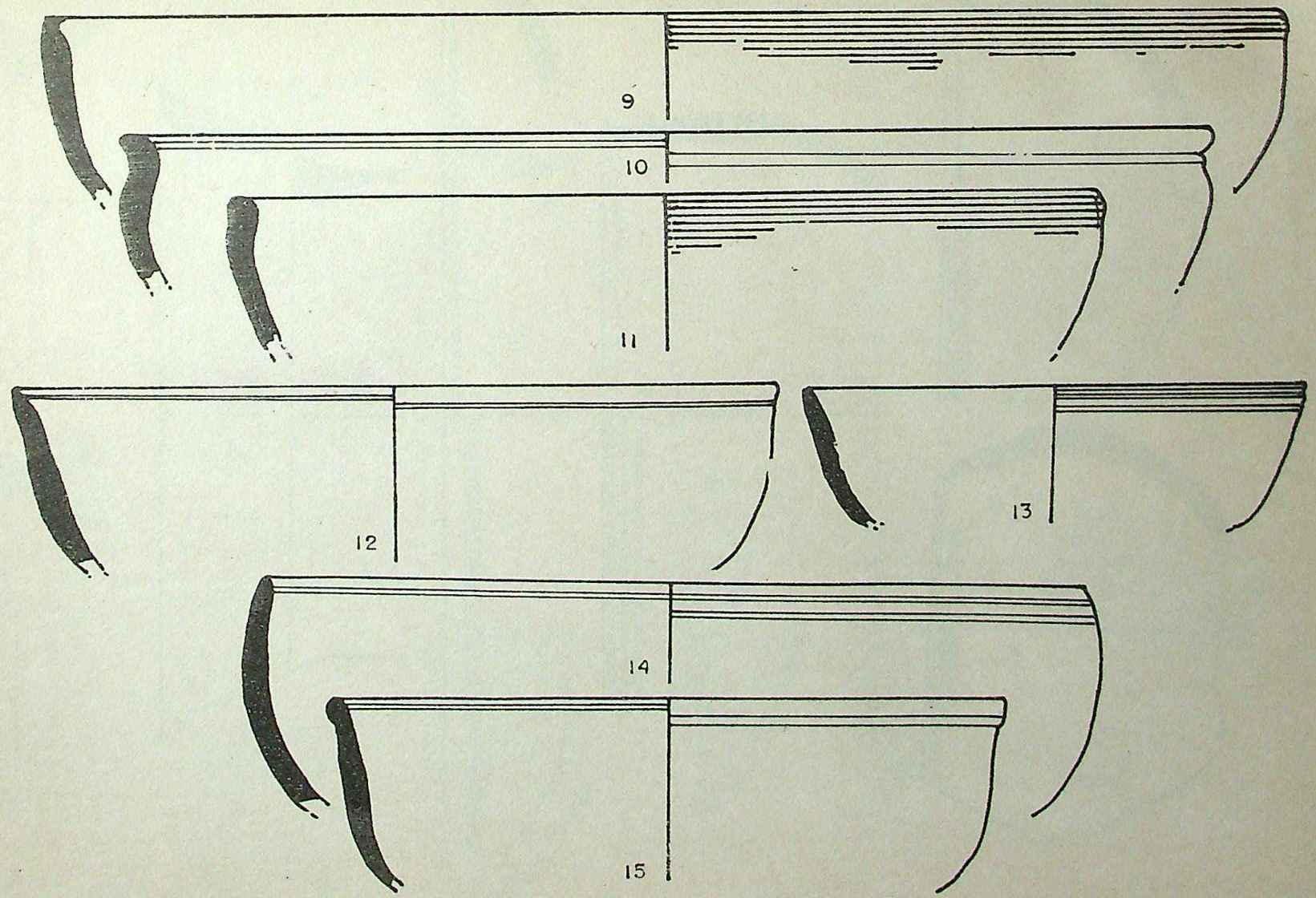


Fig. 52. Sonpur IA. Black-and-Red Ware.

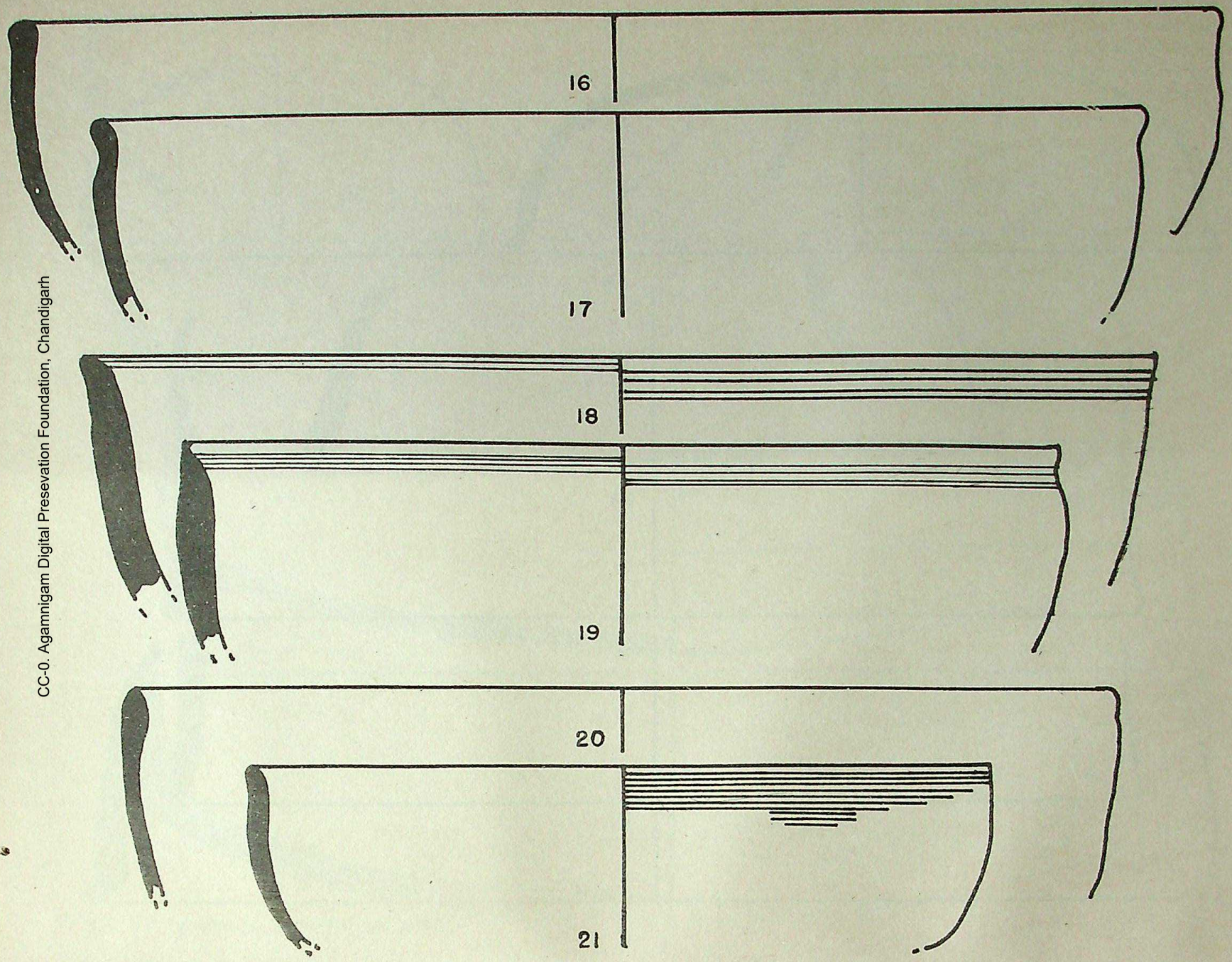
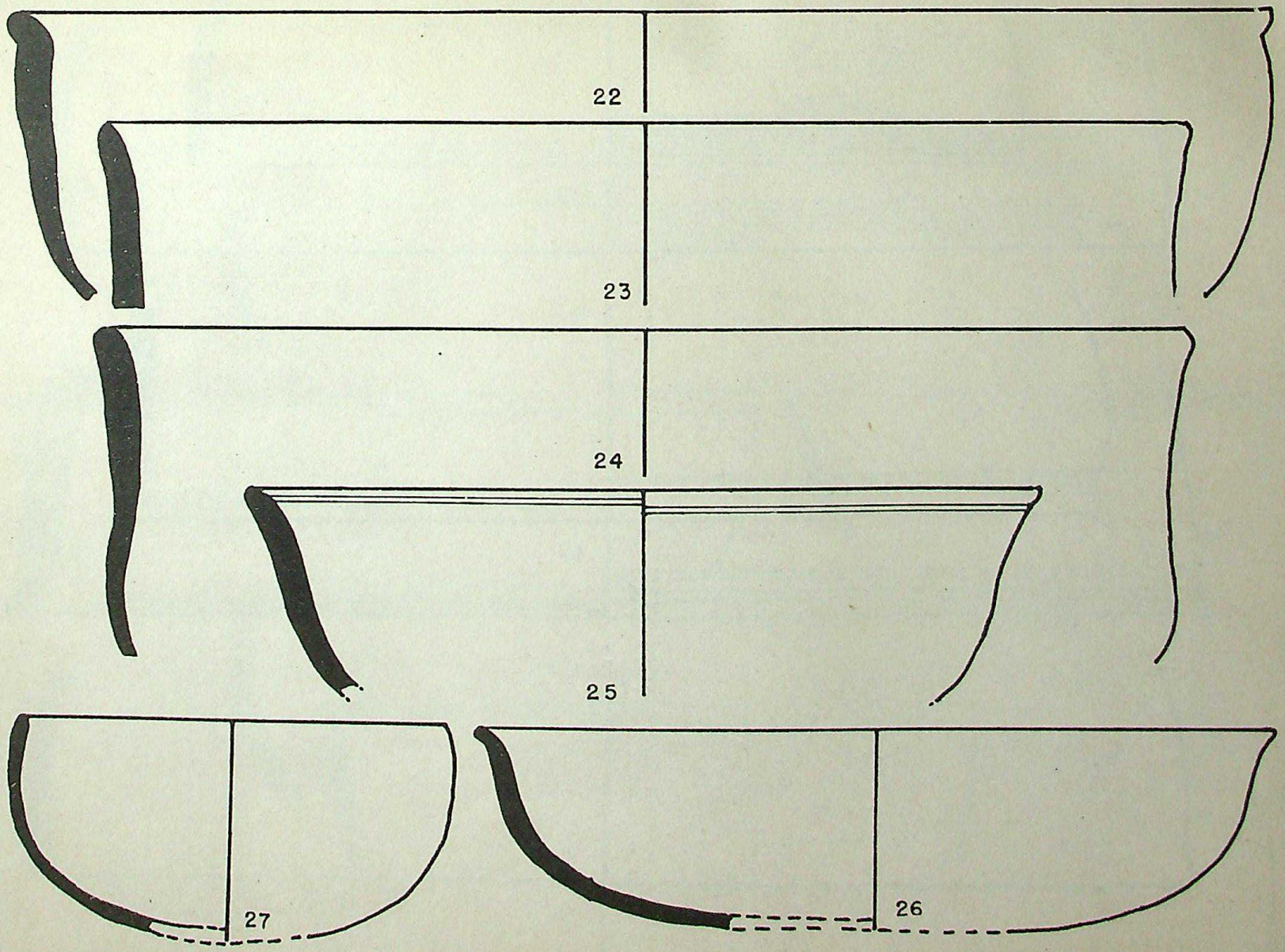


Fig. 53. Sonpur IA, Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

Fig. 54. Sonpur IB, Black-and-Red Ware.



CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

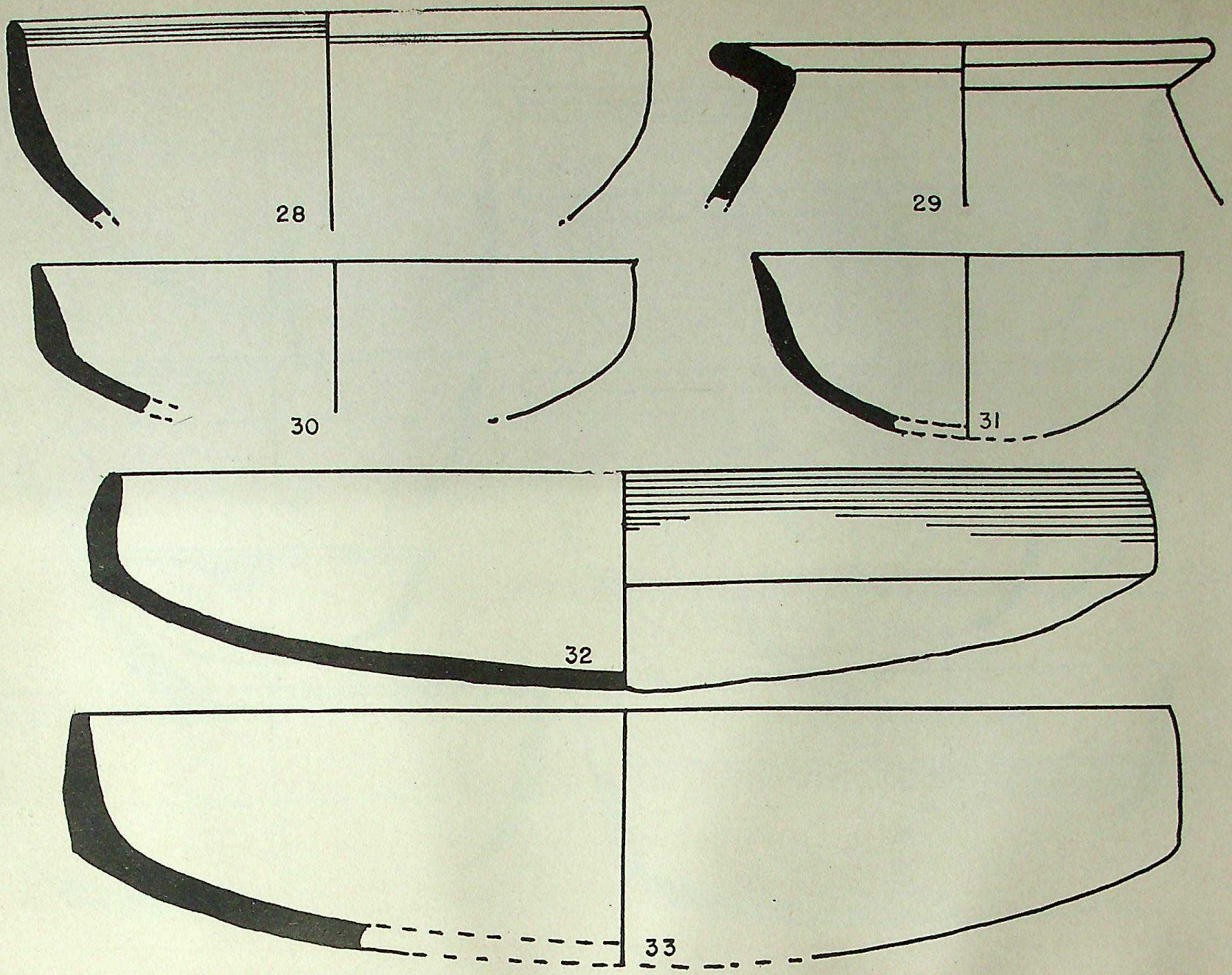


Fig. 55. Sonpur IB, Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

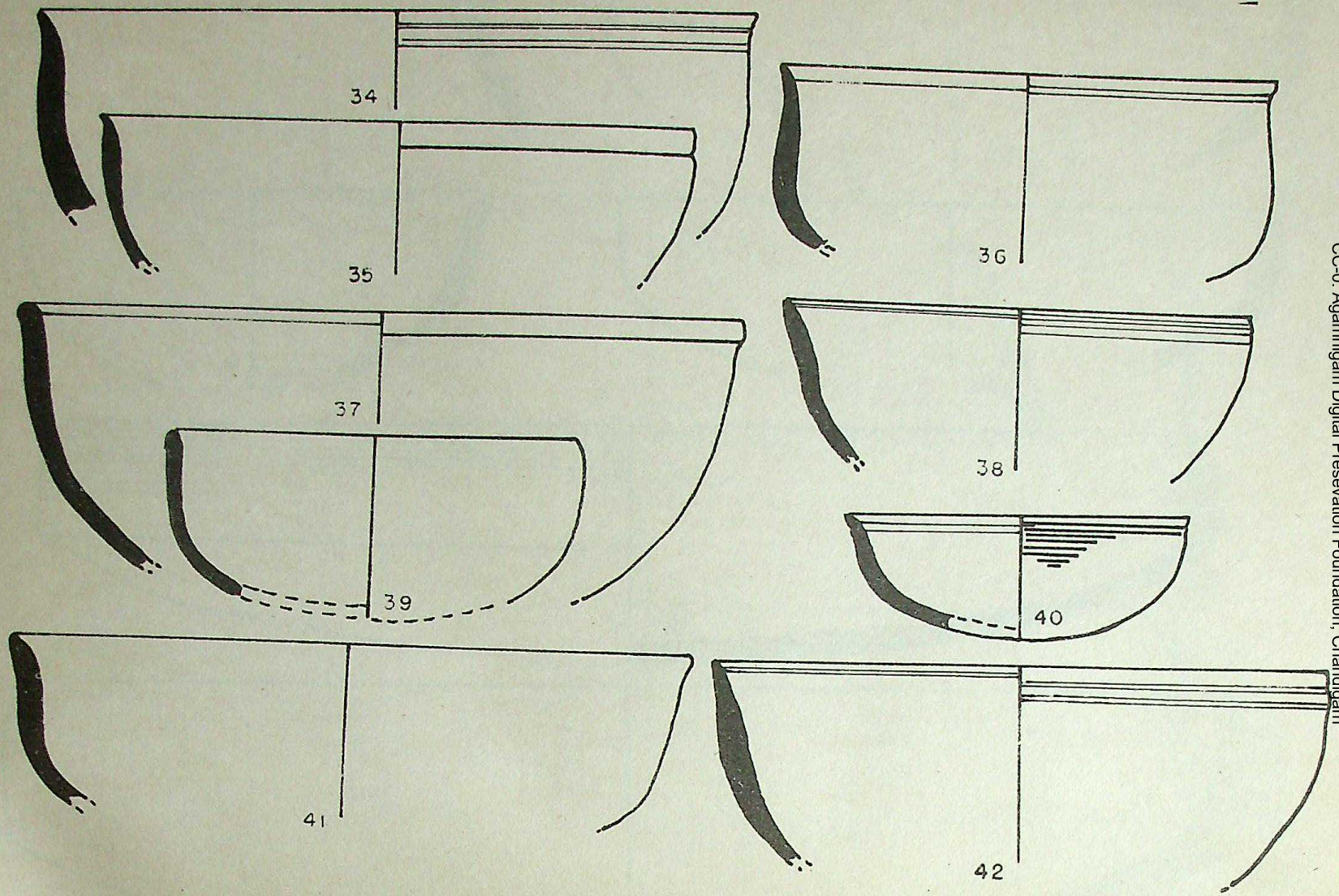


Fig. 56. Sonpur 1B. Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

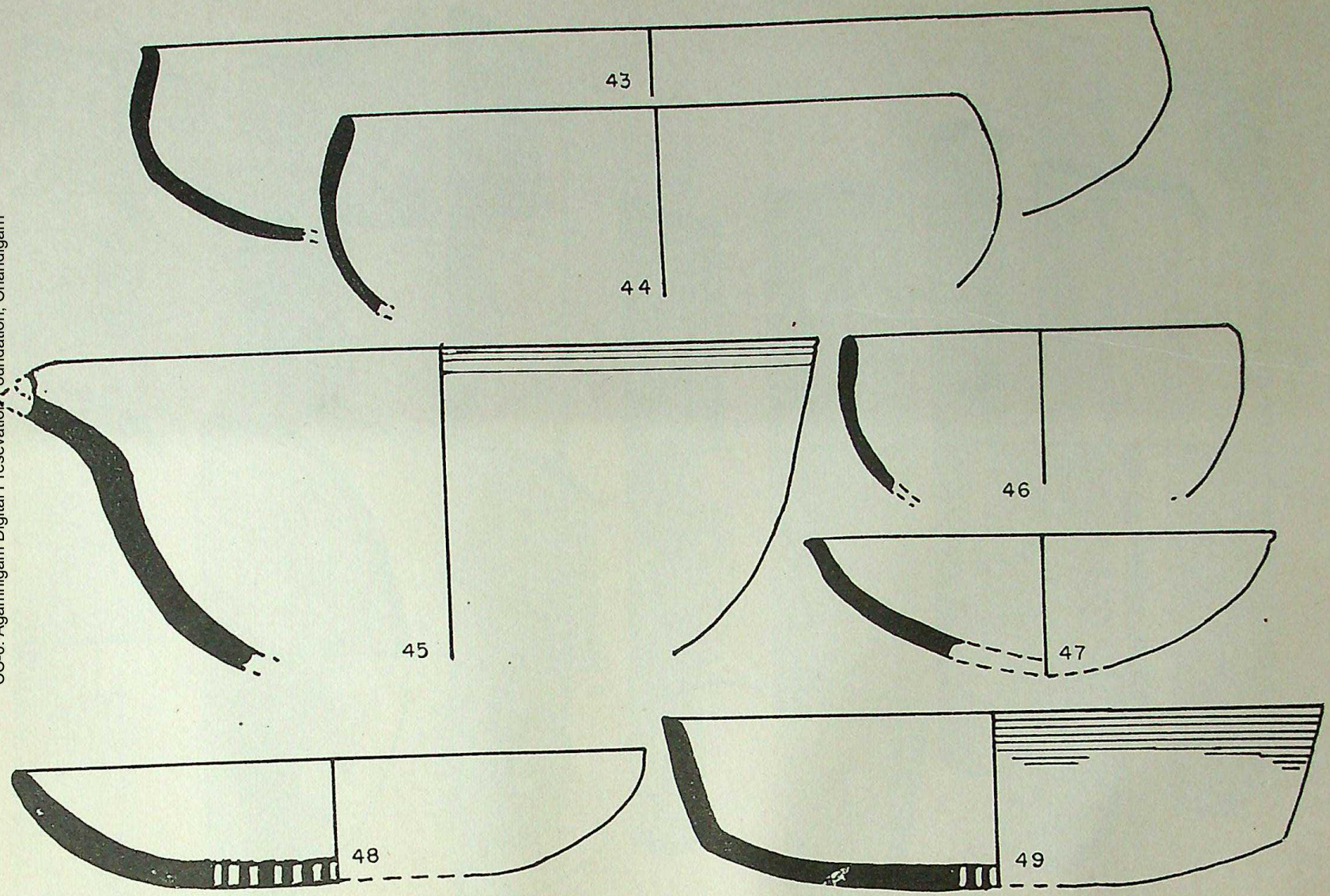


Fig. 57. Sonpur IB, Black-and-Red Ware.

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CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

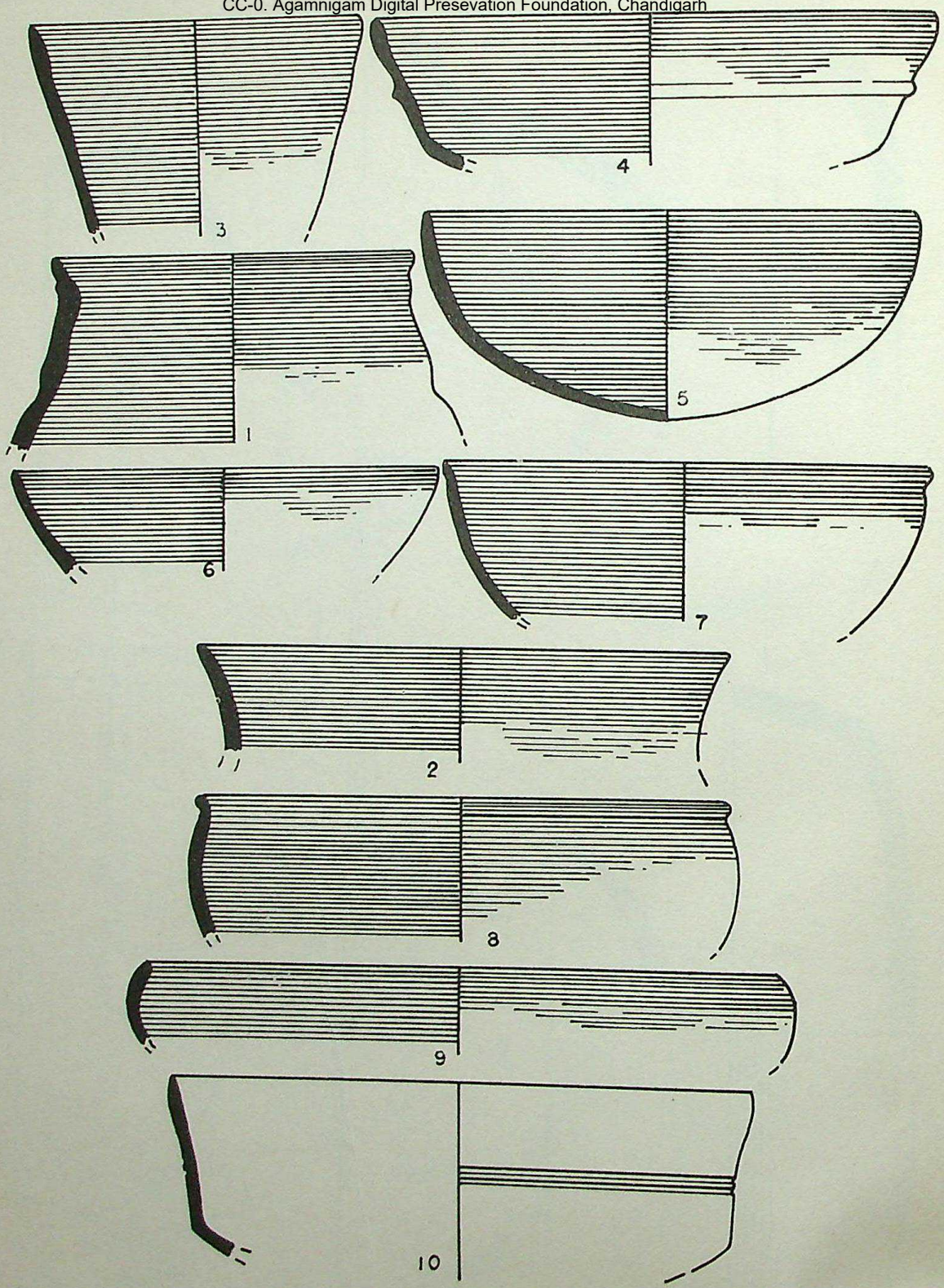

Fig. 58. Atranjikhera, 1 to 9; Hastinapur, 10 Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

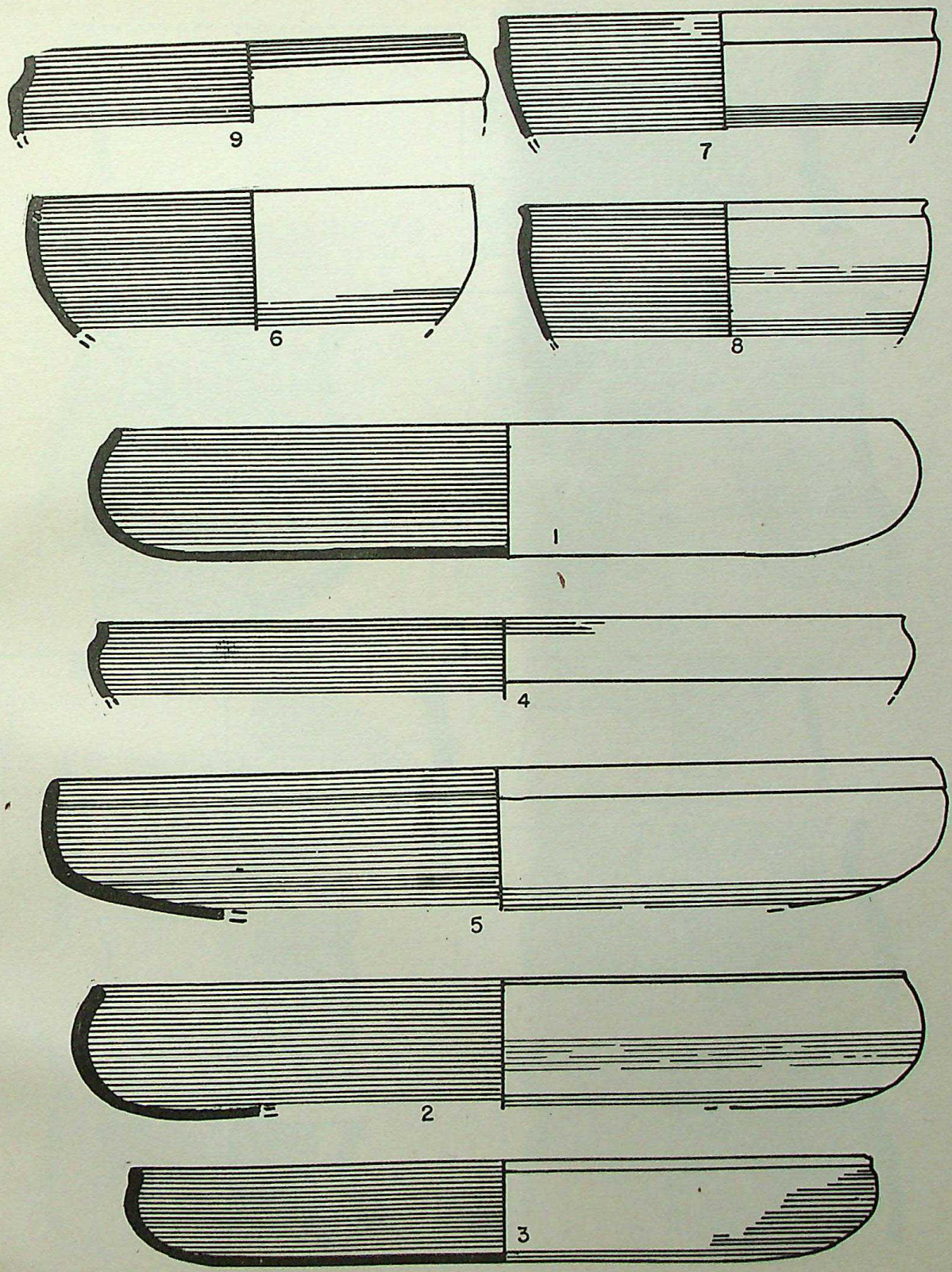

Fig. 59. Sravasti, Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

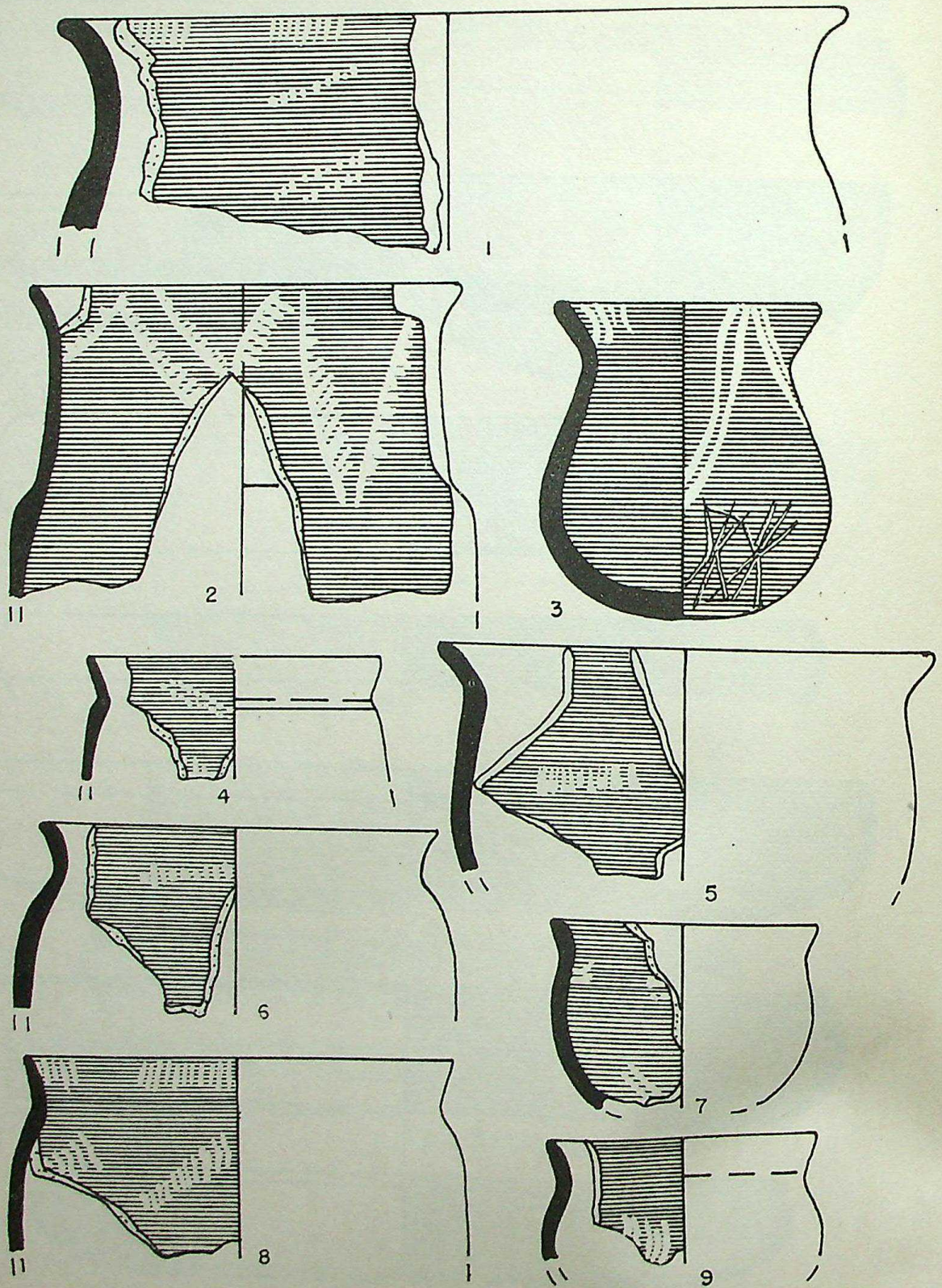

Fig. 60. Prakash, Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

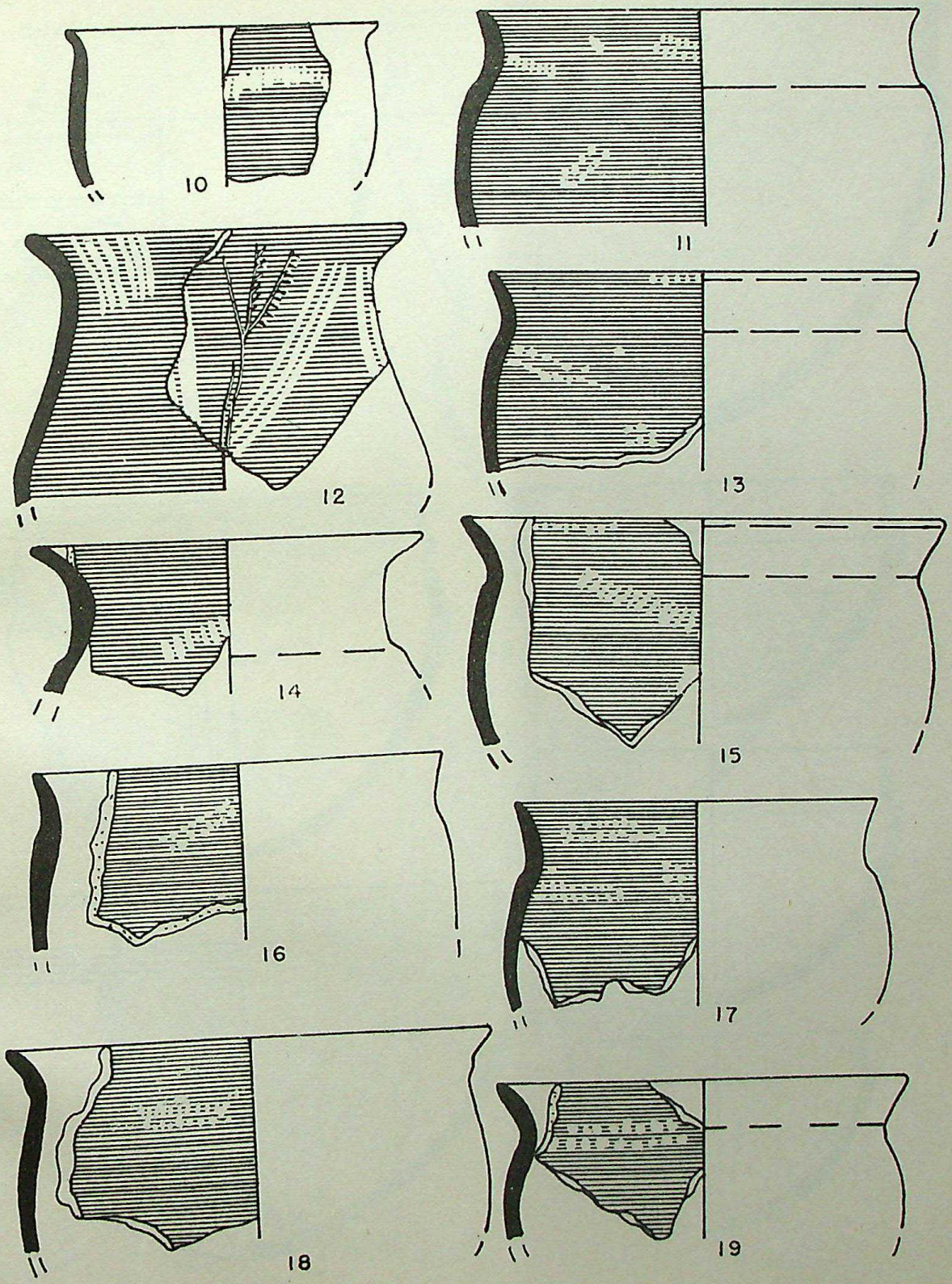

Fig. 61. Prakash, Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

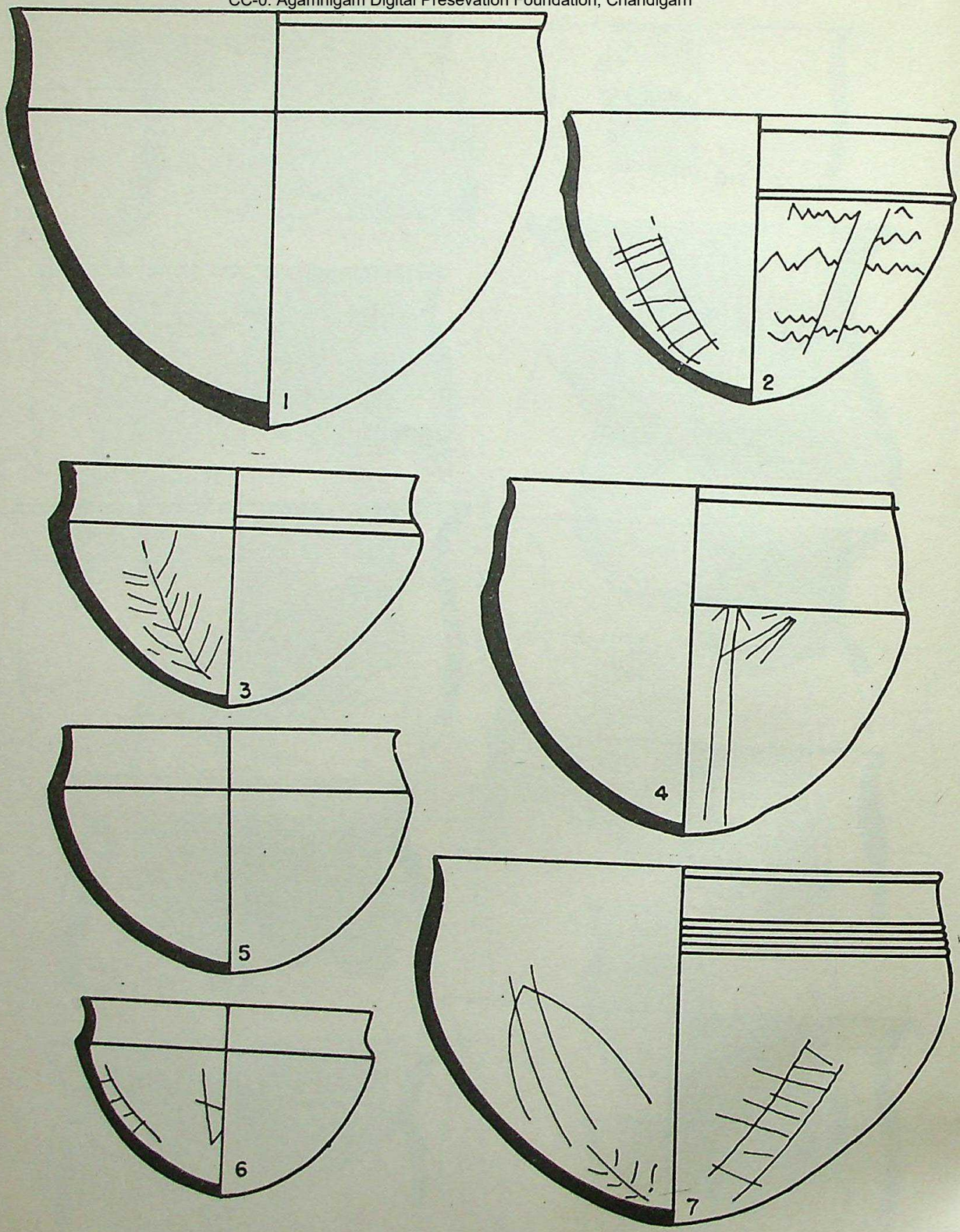

Fig. 62. Tekwada, Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

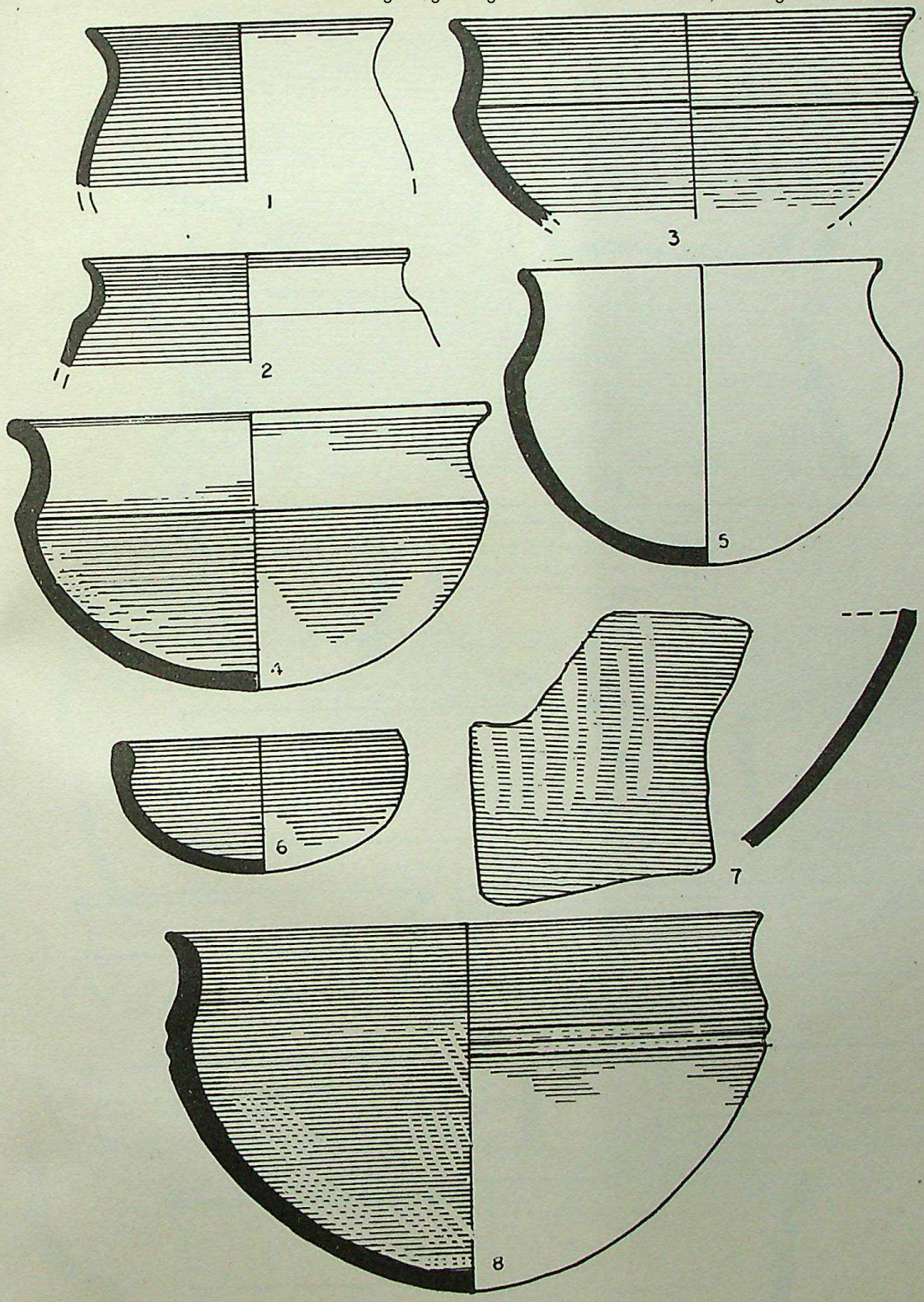

Fig. 63. Bahurupa. 1 and 2 and rest Tekkalkota, Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

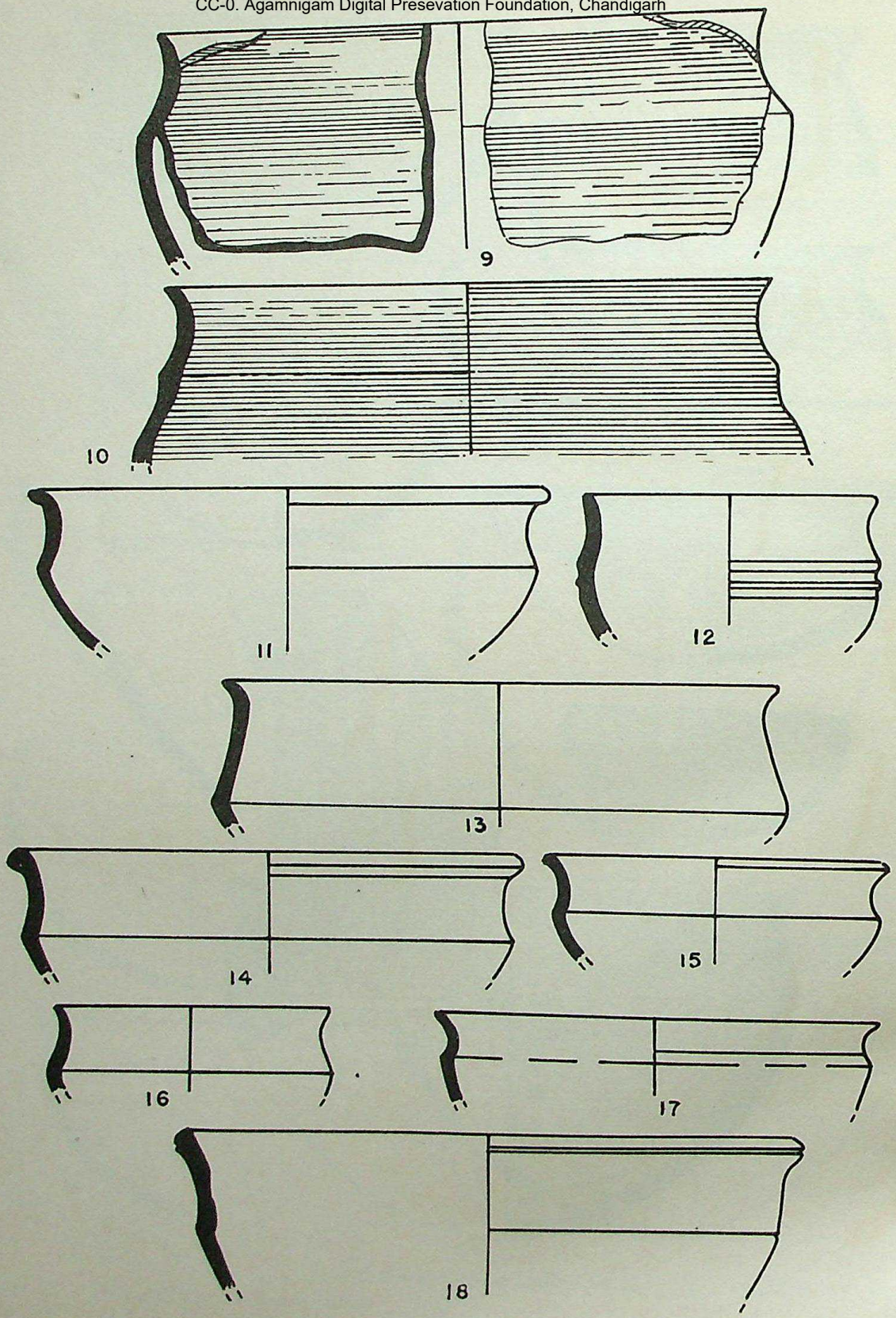

Fig. 64. Tekkalkota. 9 to 10 and rest **Bijapur District, Black-and-Red Ware.**

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

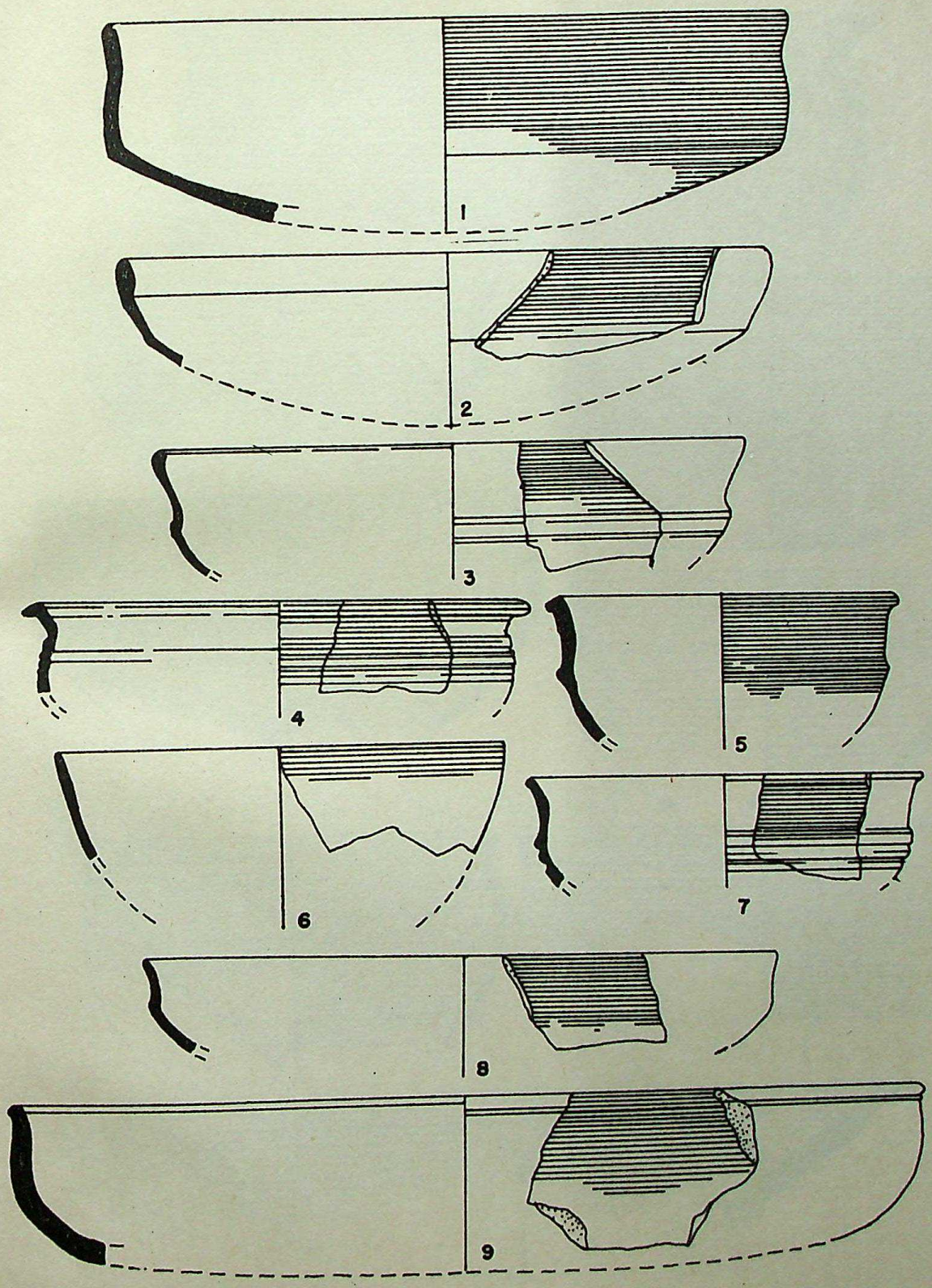

Fig. 65. Sisupalgarh, Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

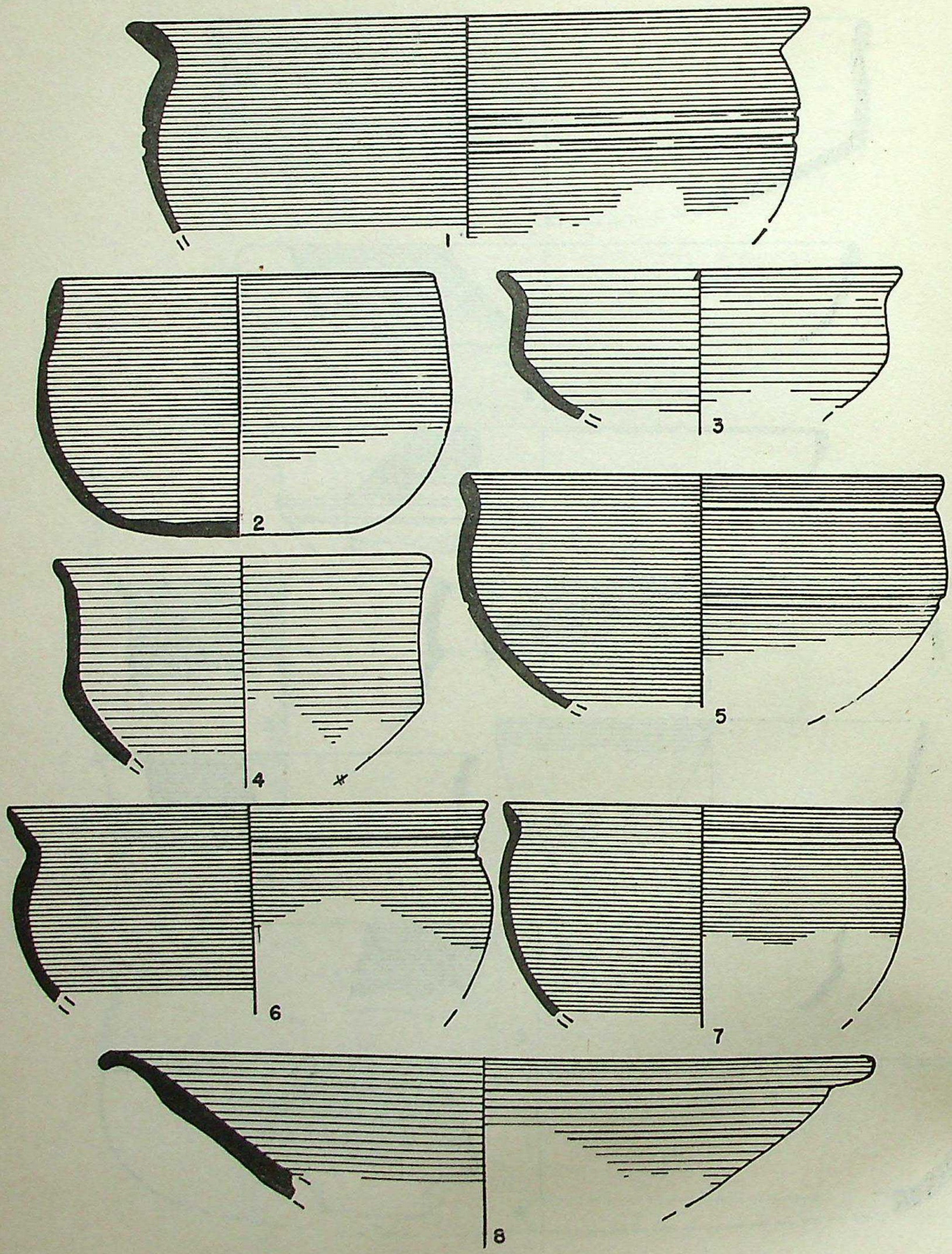

Fig. 66. Kesarpalle, Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

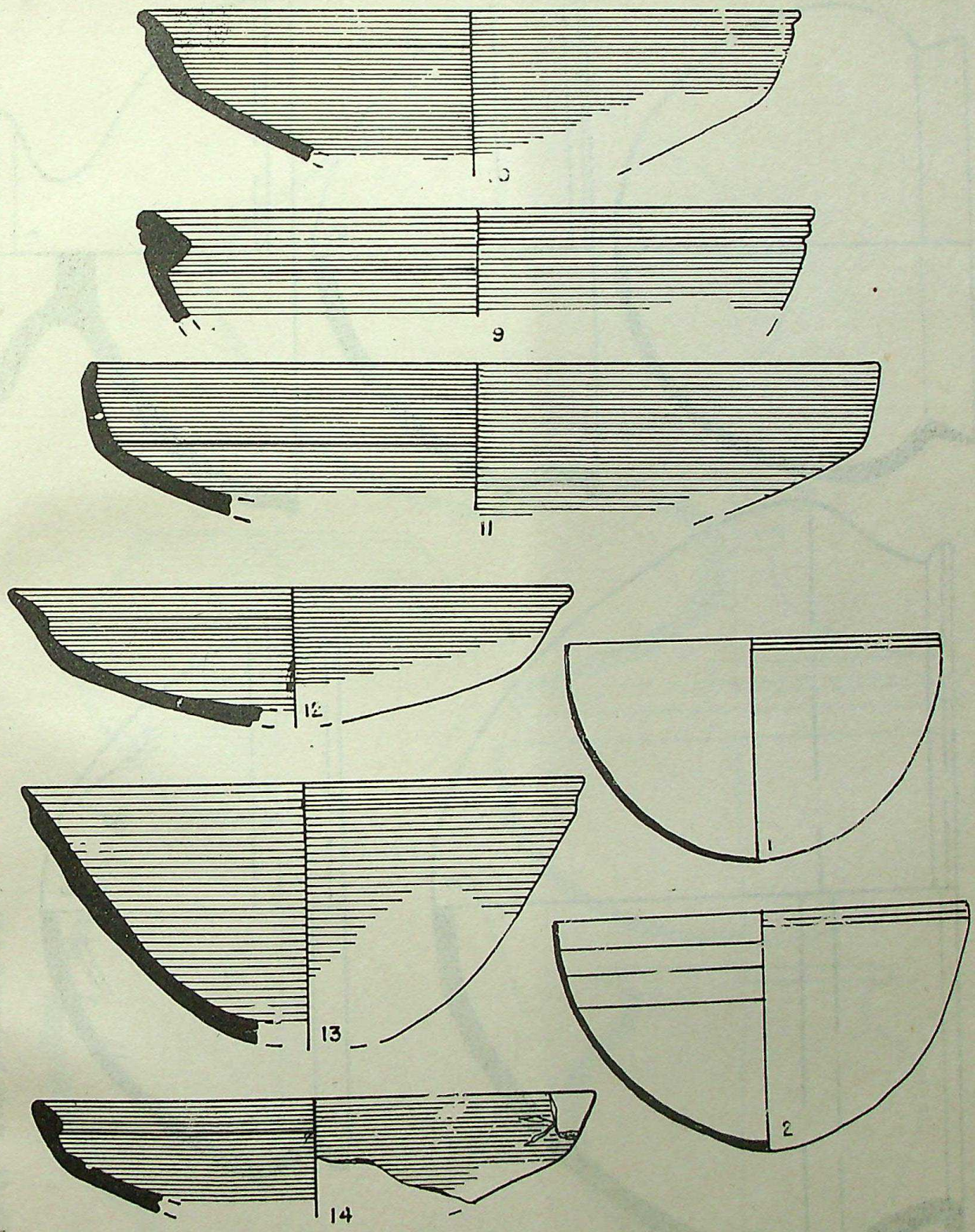

Fig. 67. Kesarpalle, 9 to 14; Maski, 1 and 2, Black-and-Red Ware.

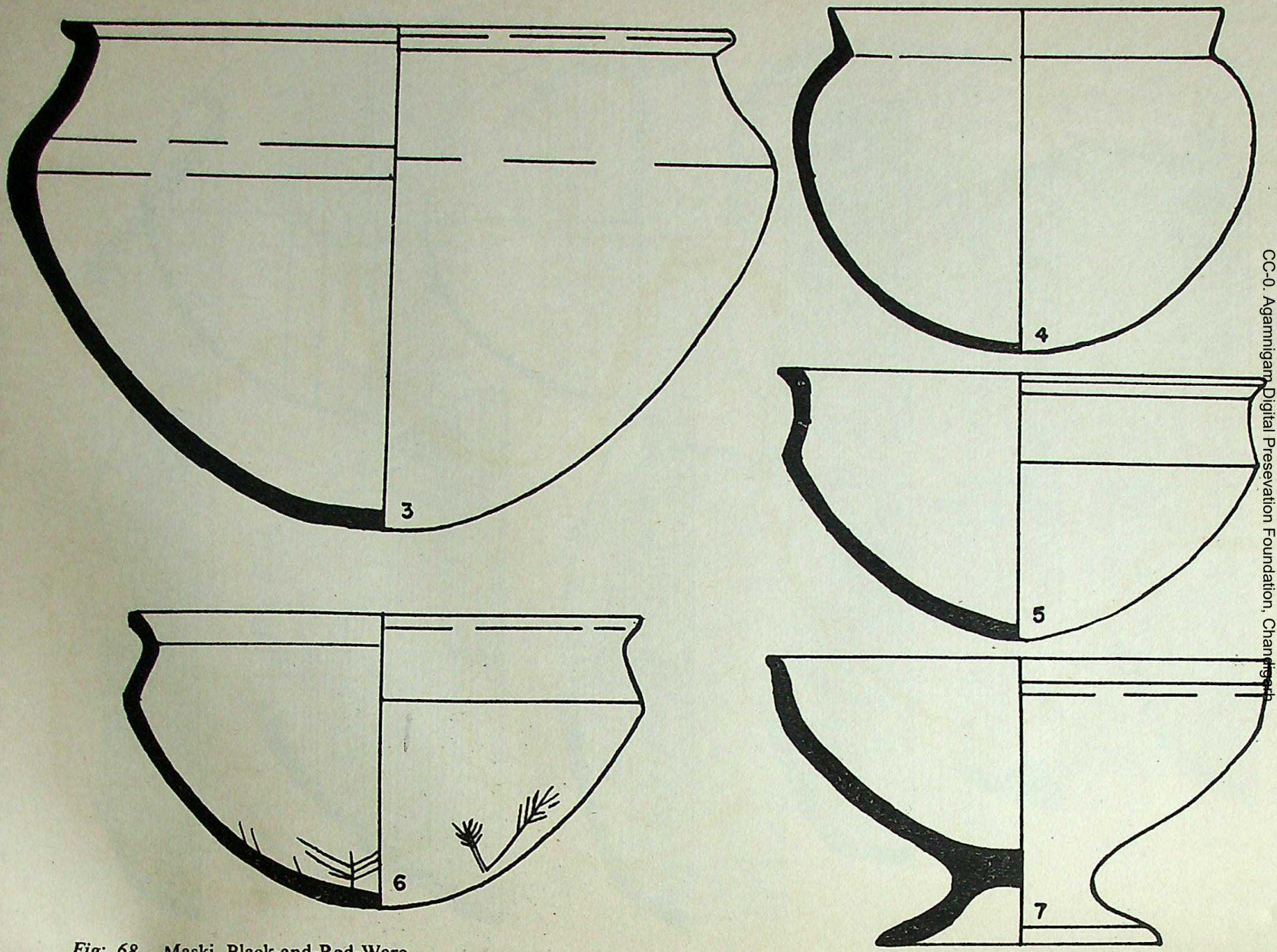

Fig: 68. Maski, Black-and-Red-Ware.

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CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

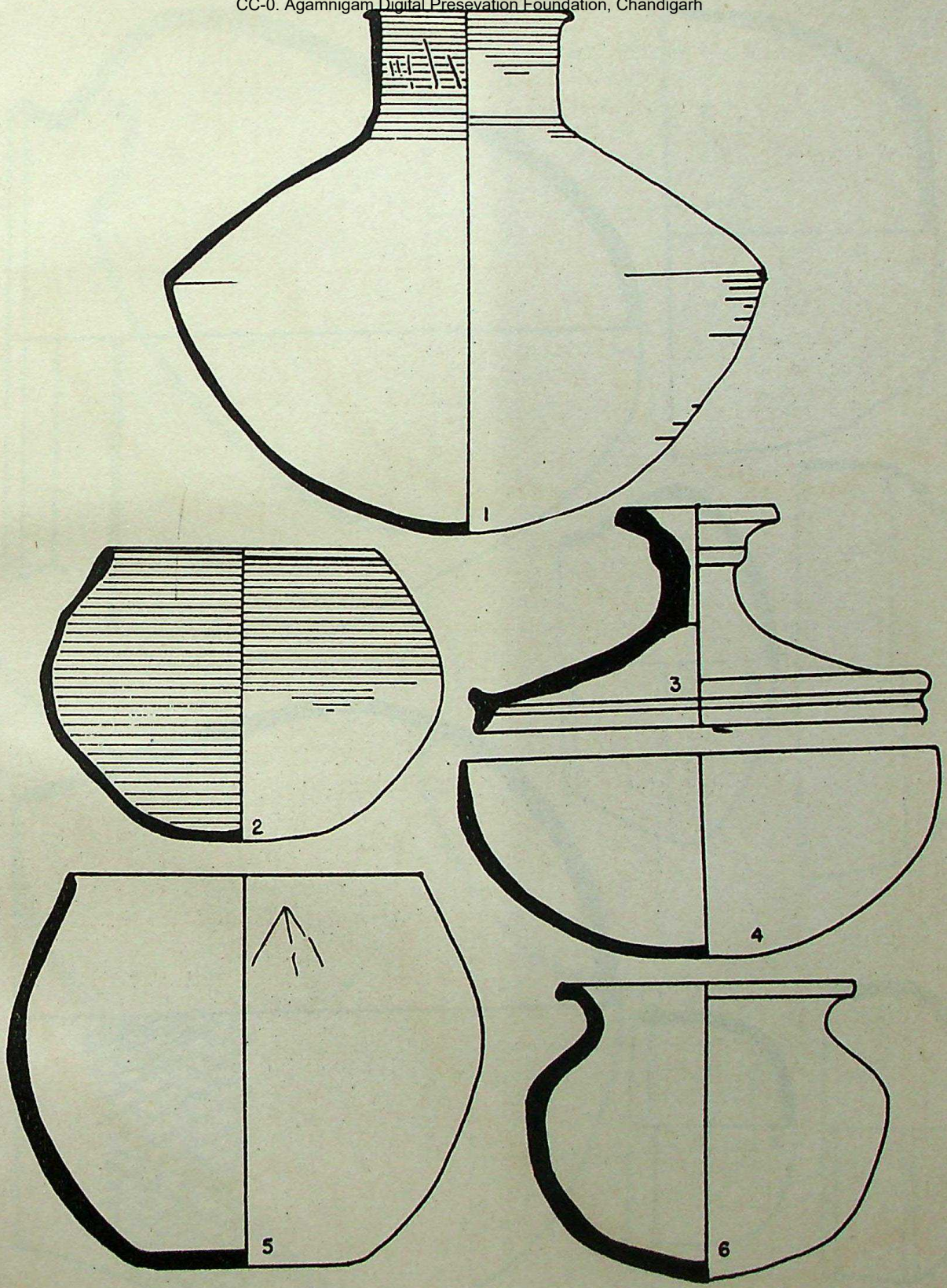

Fig. 69. Amirthamangalam, 1 and 2; Porkalam, 3 to 6, Black-and-Red Ware.

Fig. 70. Porkalam, 7 to 9; Brahmagiri 10 to 13, Black-and-Red Ware.

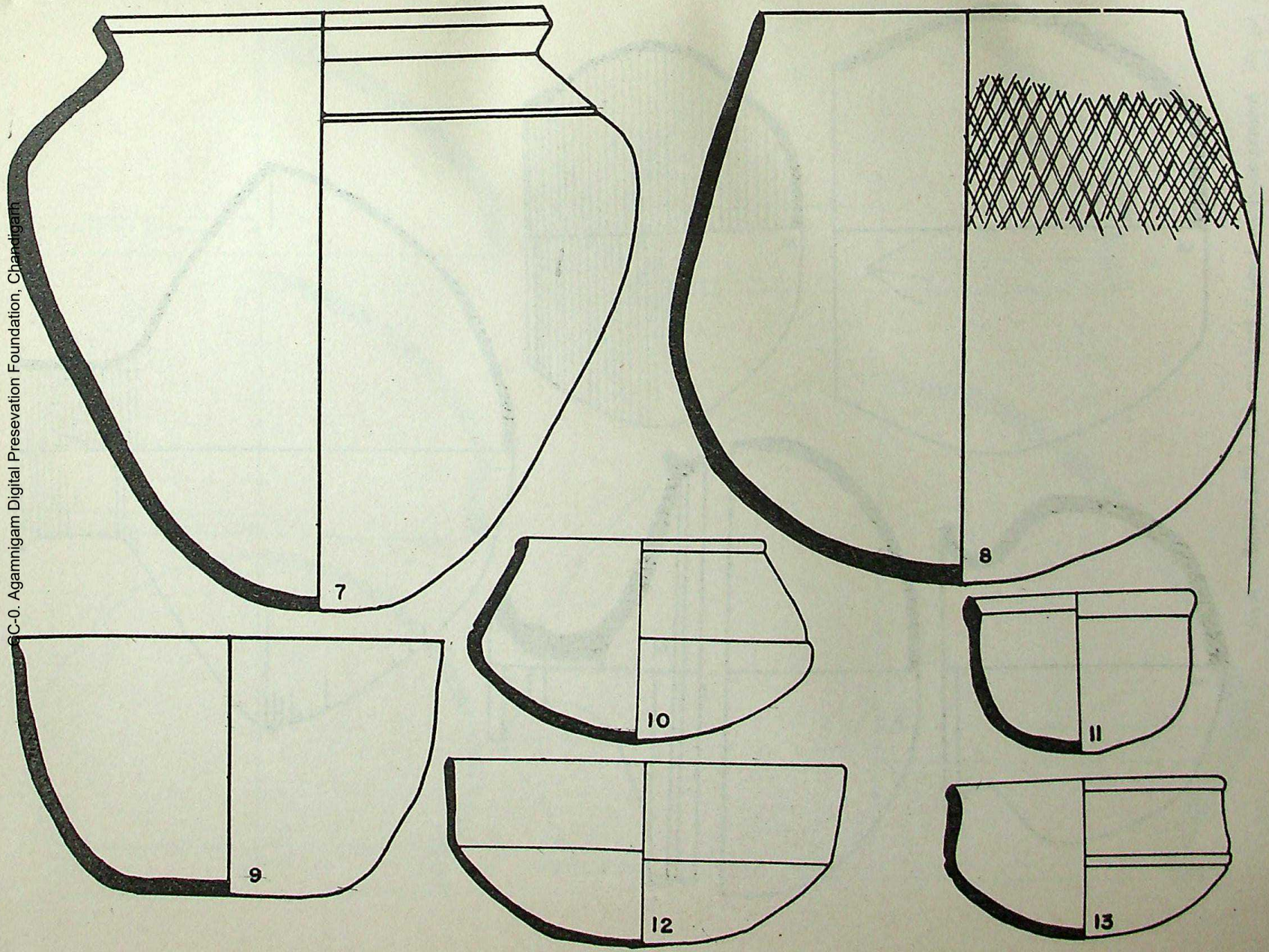

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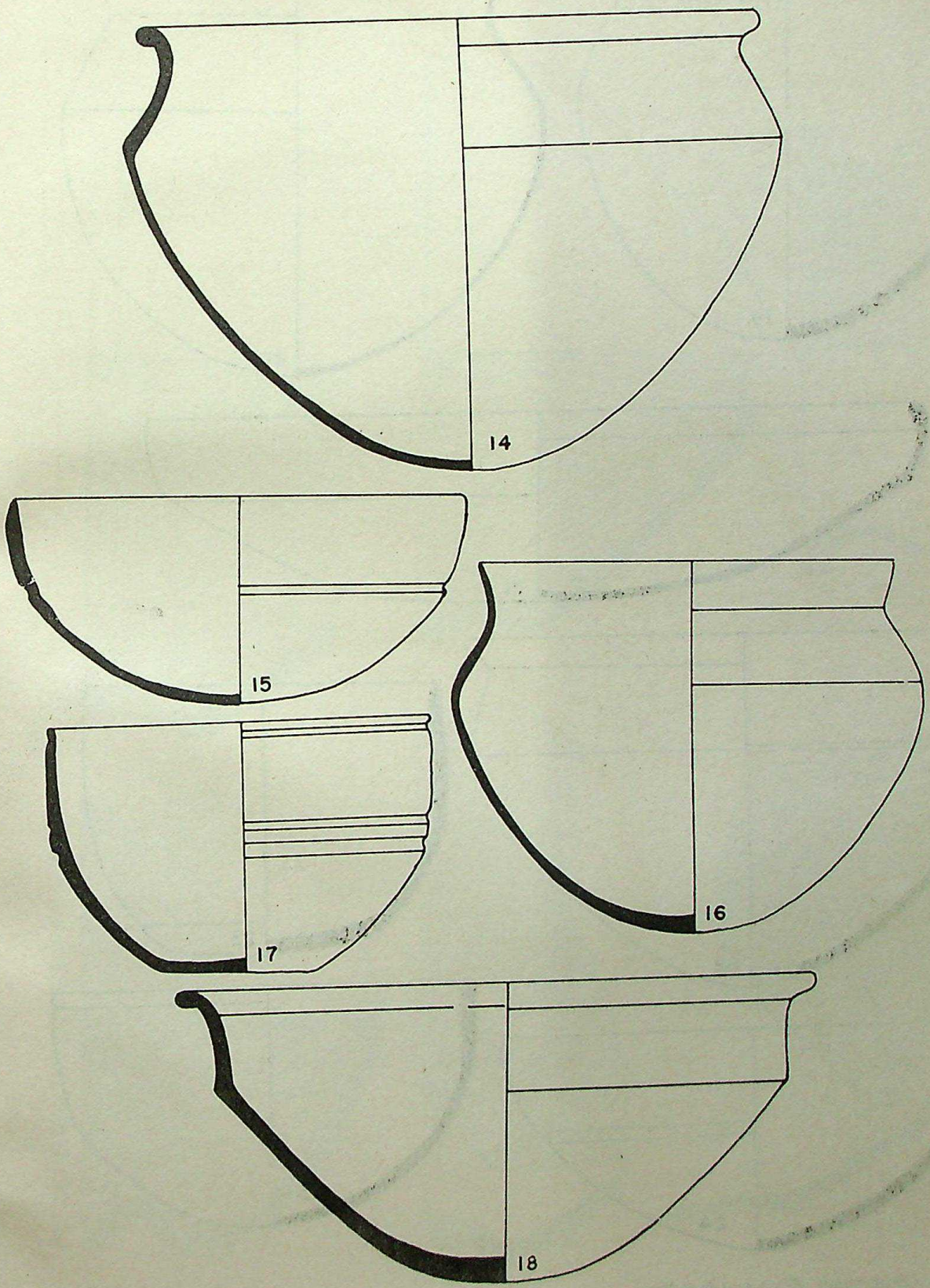
Fig. 71. Brahmagiri, Black-and-Red Ware.



CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

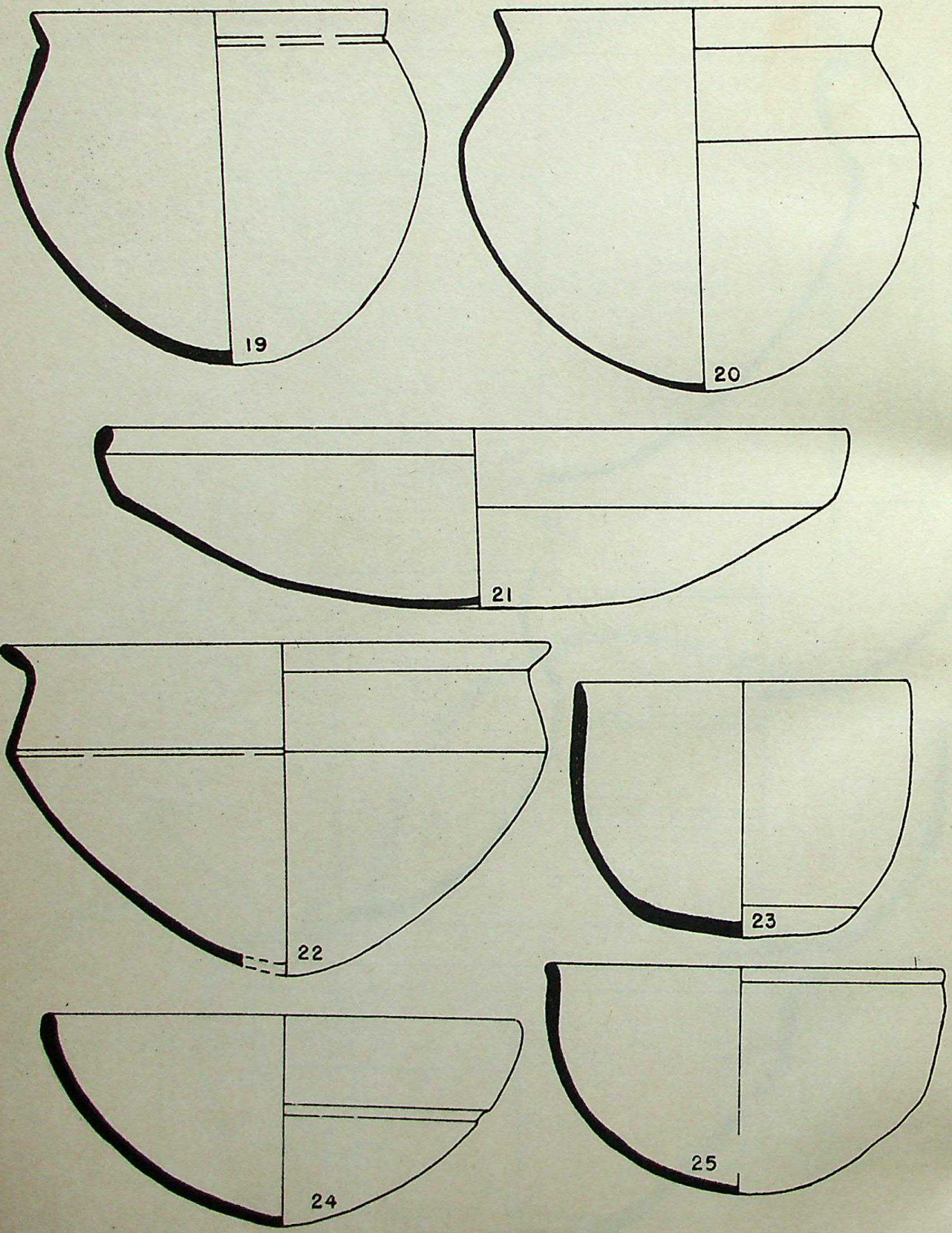


Fig. 72. Brahmagiri, Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

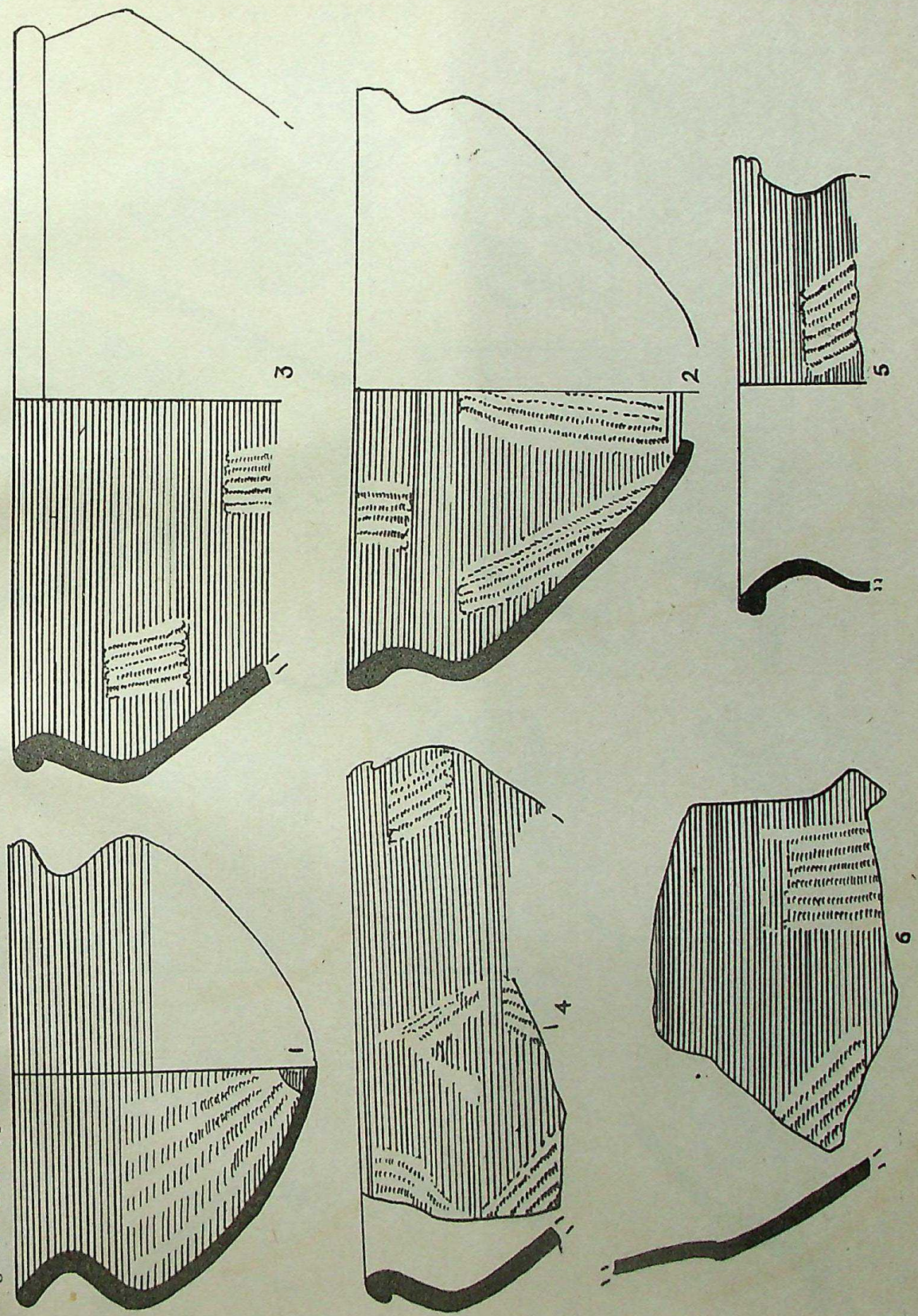


Fig. 73. Hallur, painted Black-and-Red Ware.

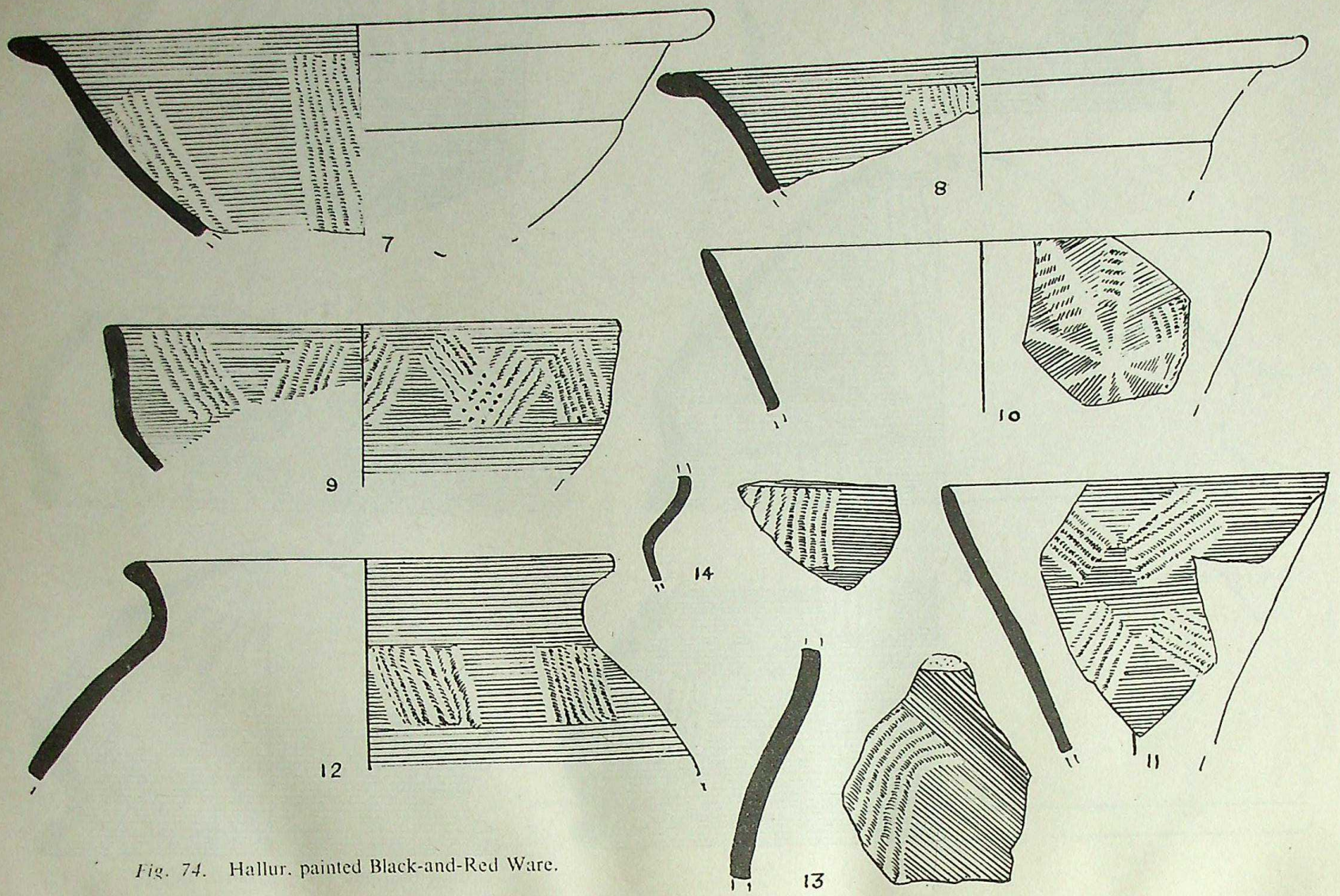


Fig. 74. Hallur, painted Black-and-Red Ware.

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Fig. 75. Hallur Unpainted Black-and-Red Ware.

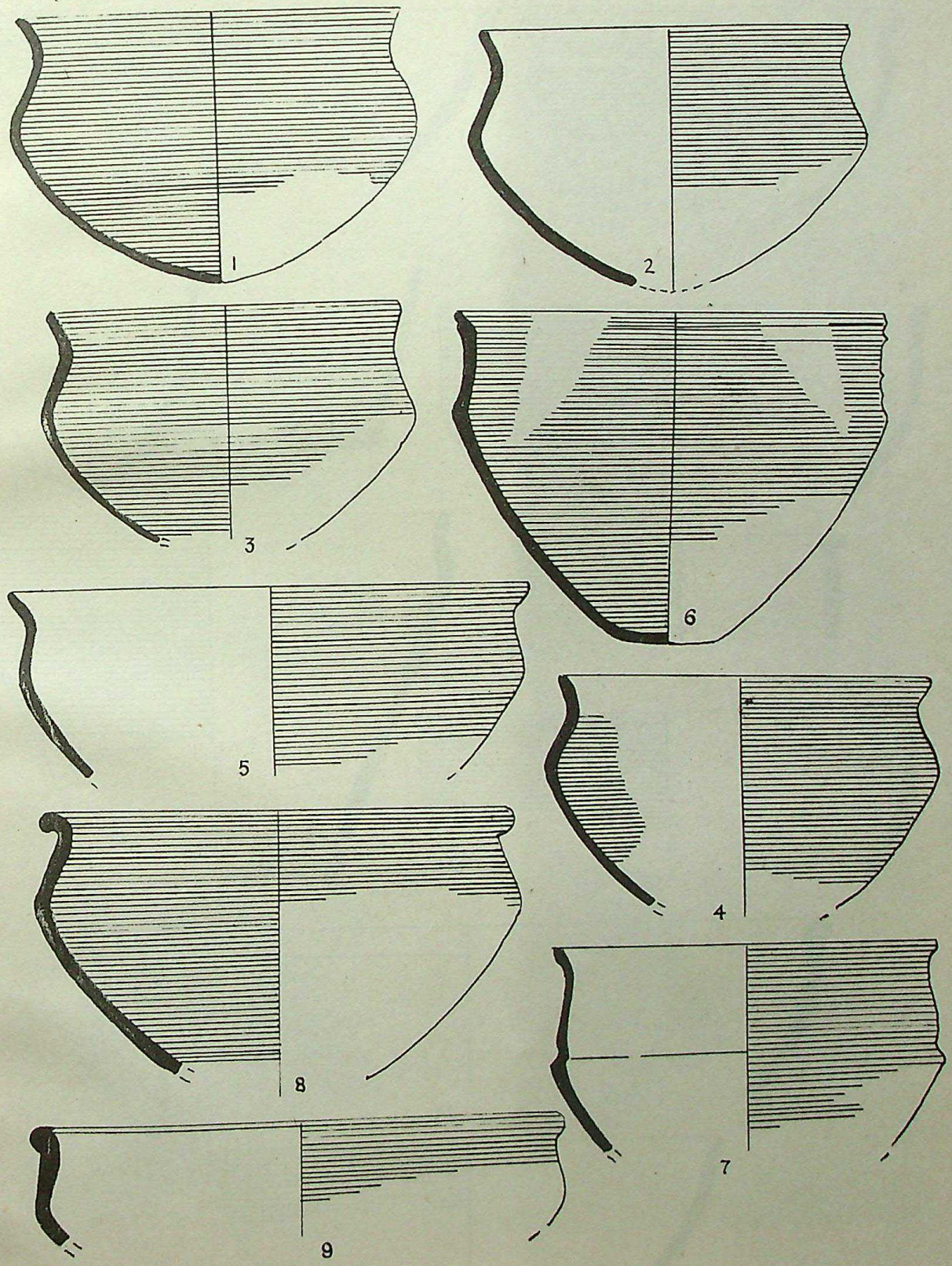

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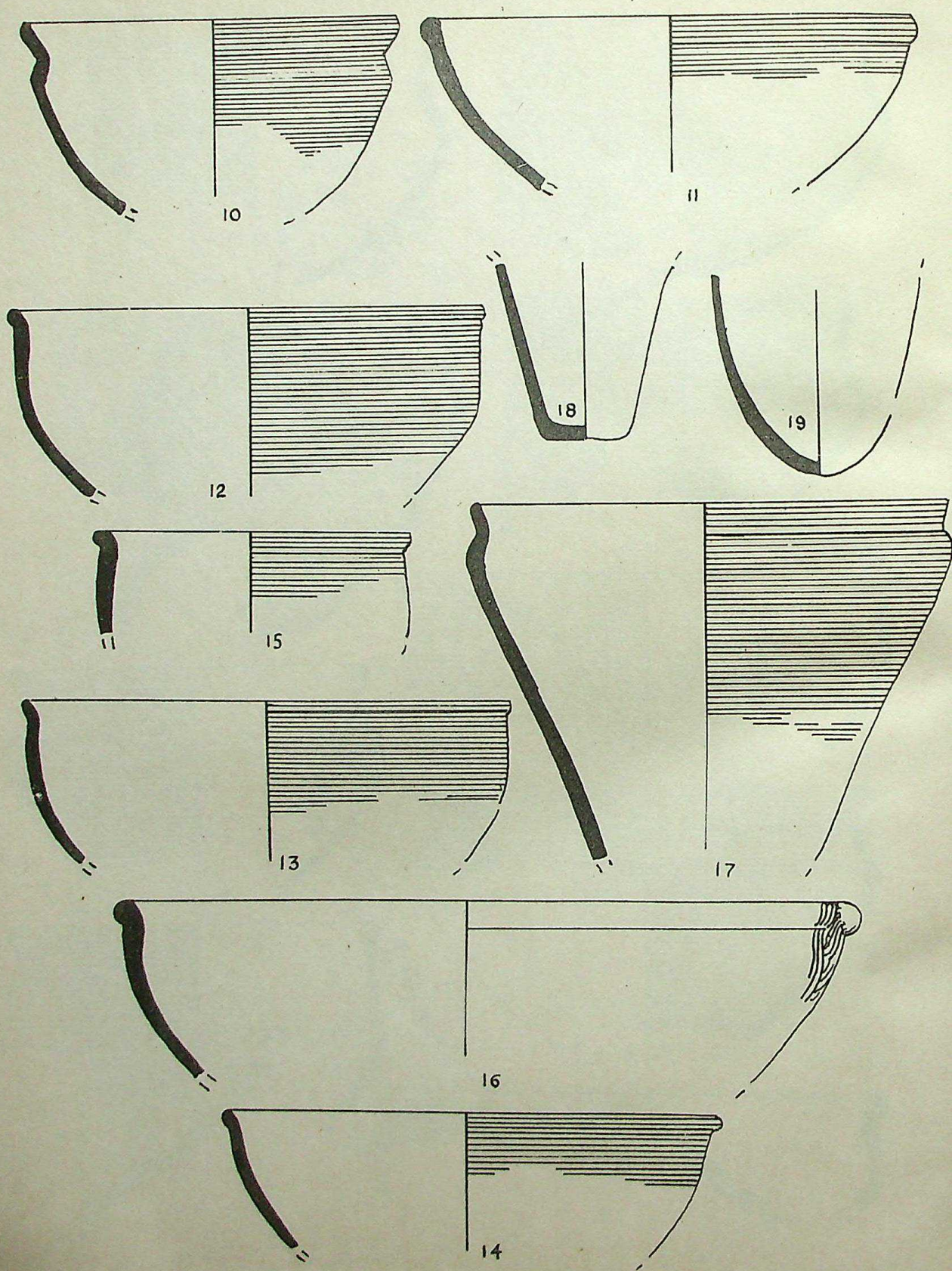
Fig. 76. Hallur. Unpainted Black-and-Red Ware.



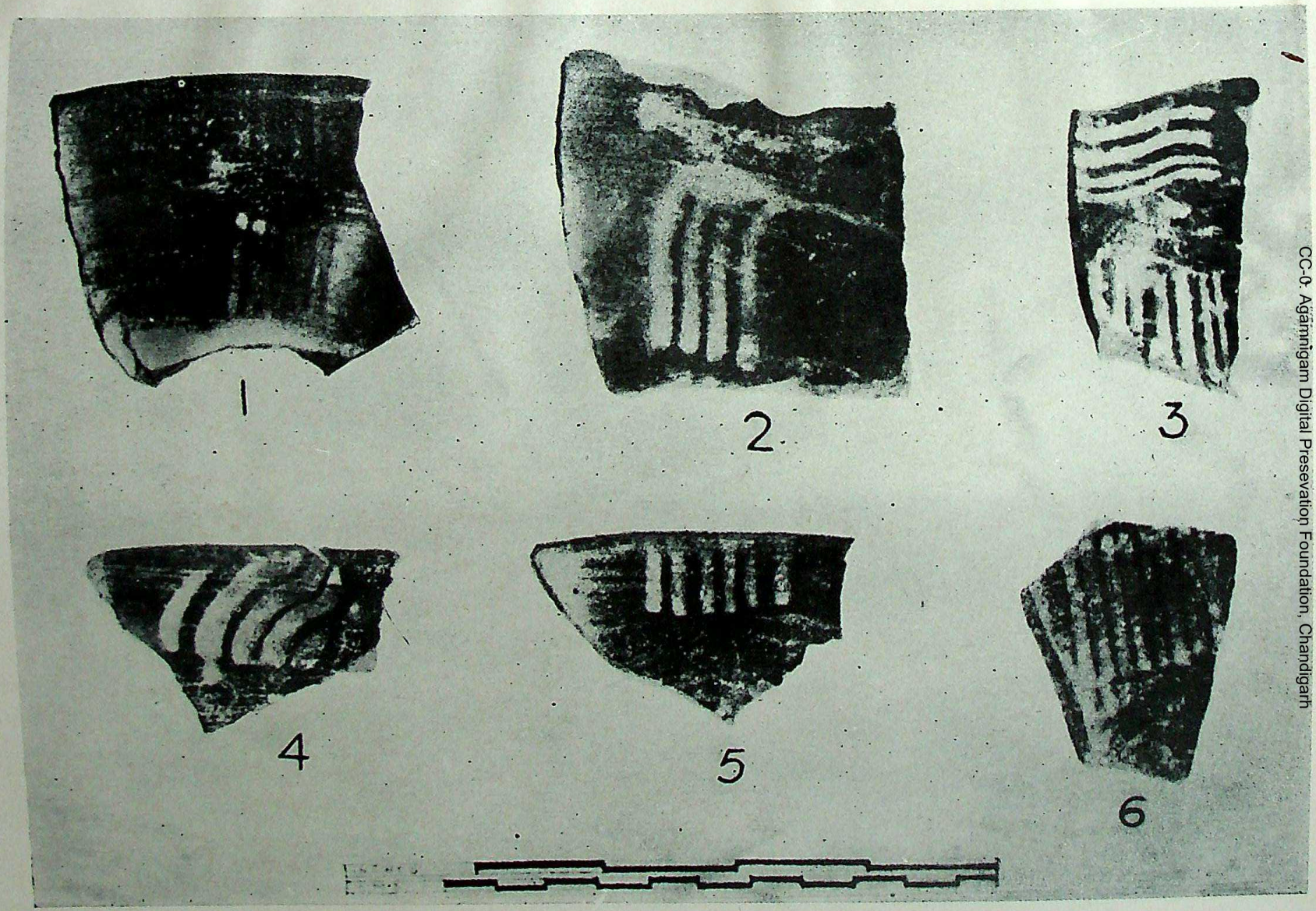


Plate I. Rangpur, painted Black-and-Red Ware.

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Plate II. Ahar, painted Black-and-Red Ware Bowl.

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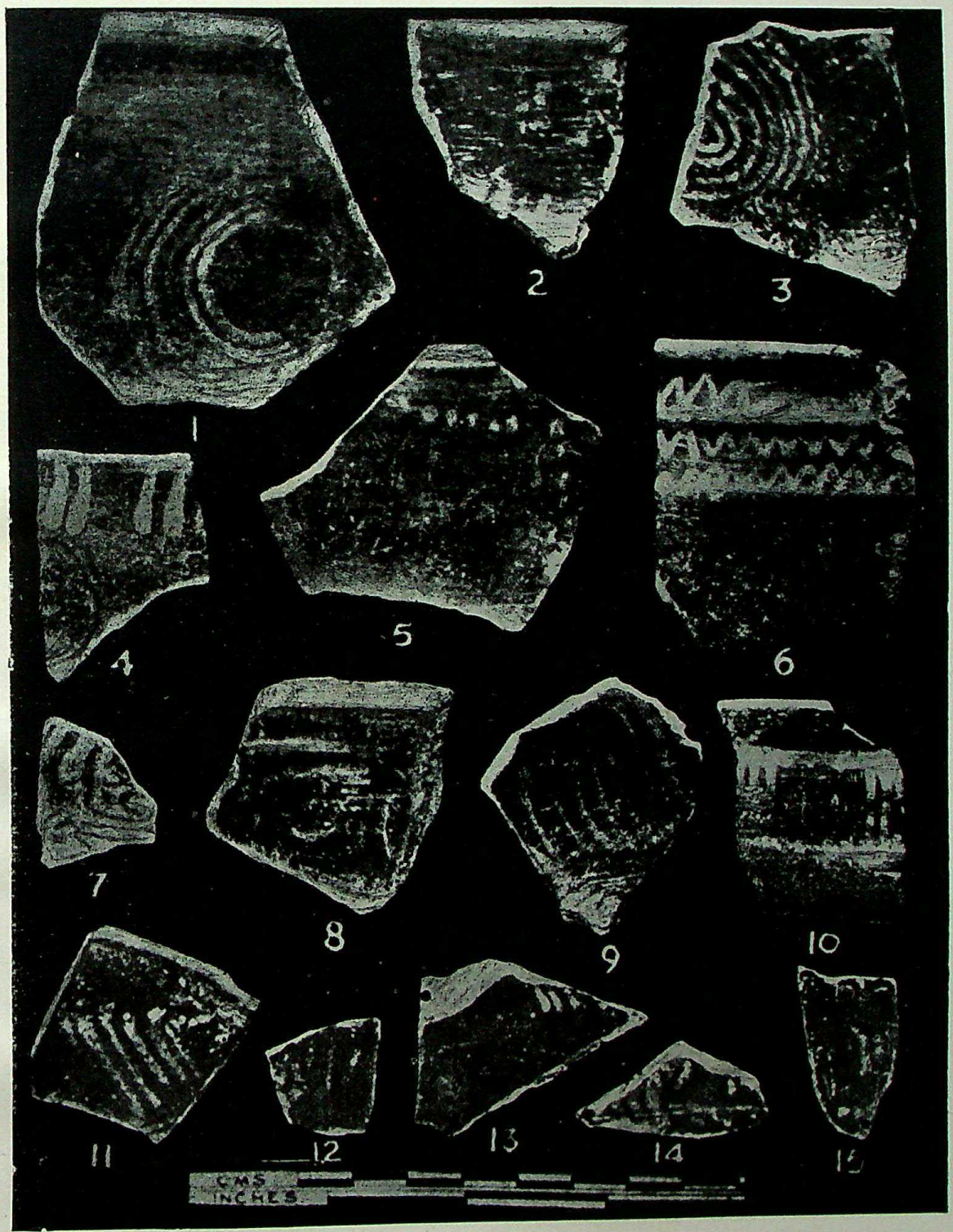

Plate III. Other sites in South-eastern Rajasthan, painted Black-and-Red Ware.

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Plate IV. Other sites in South-eastern Rajasthan, painted Black-and-Red Ware.

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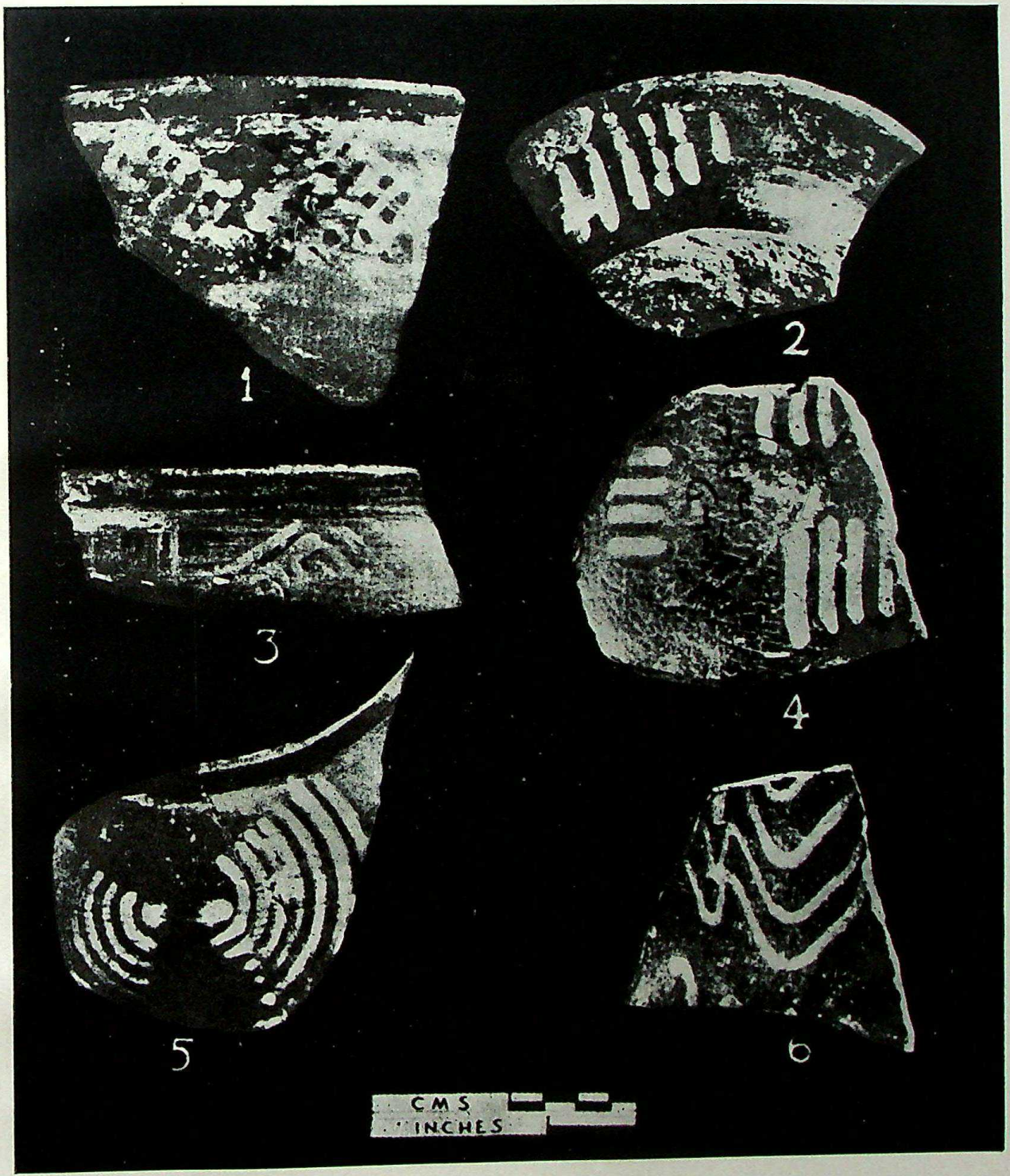

Plate V. Gilund, painted Black-and-Red Ware.

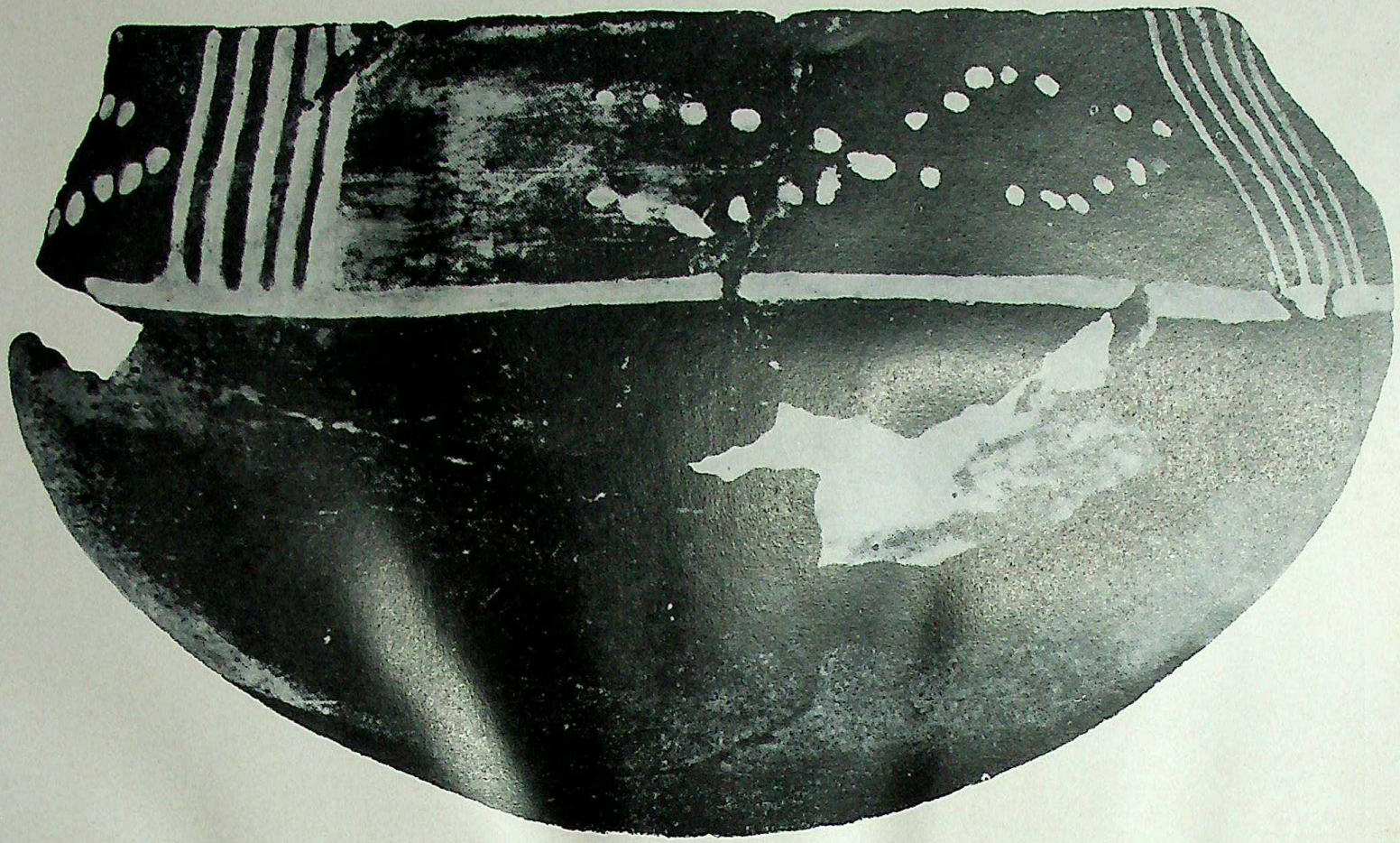

Plate VI. Navdatoli, painted Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

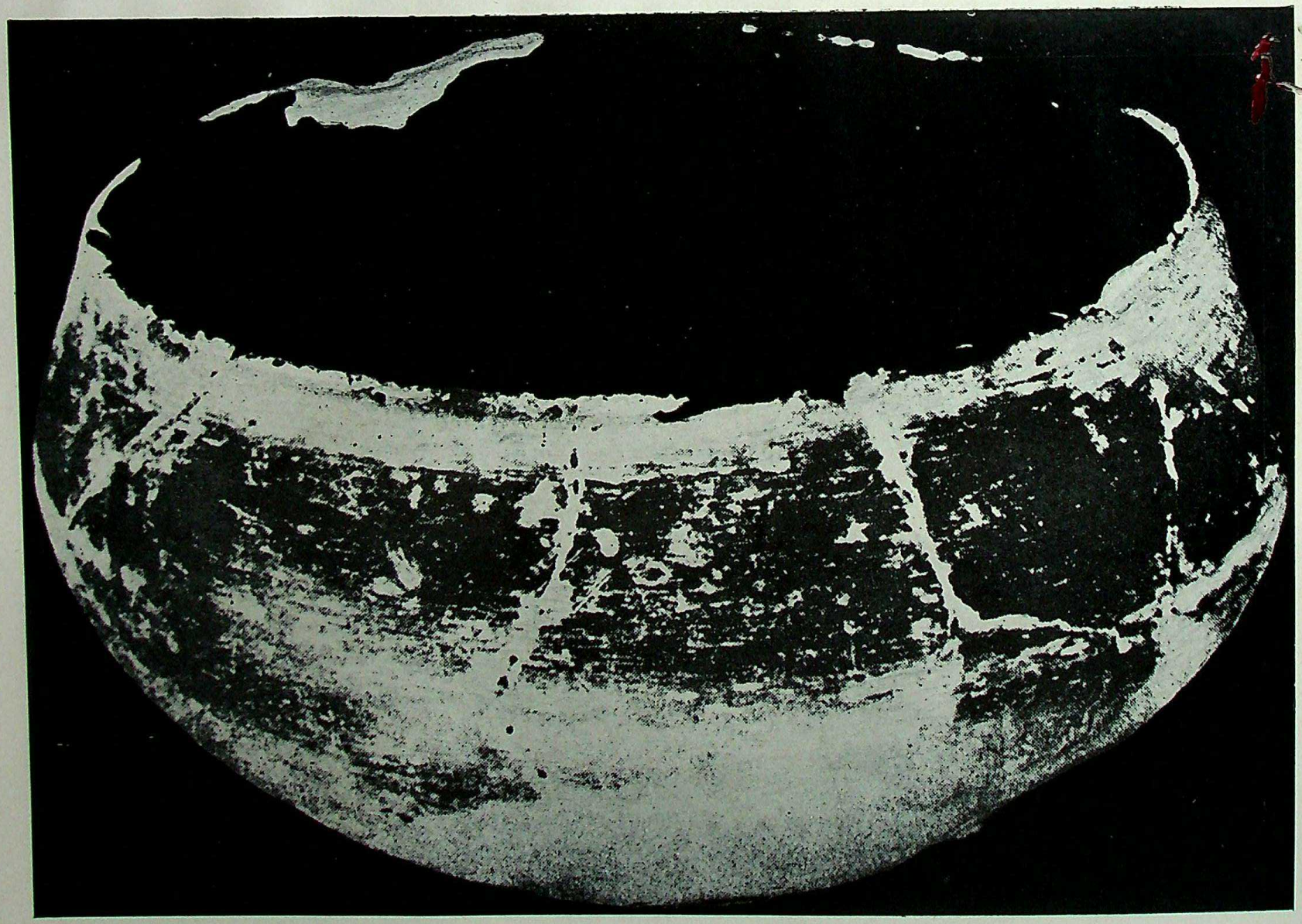

Plate VII. Navdatoli, Black-and-Red Ware.

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Plate VIII. Navdatoli, Black-and-Red Ware.

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Plate IXa. Tumas, Black-and-Red Ware.

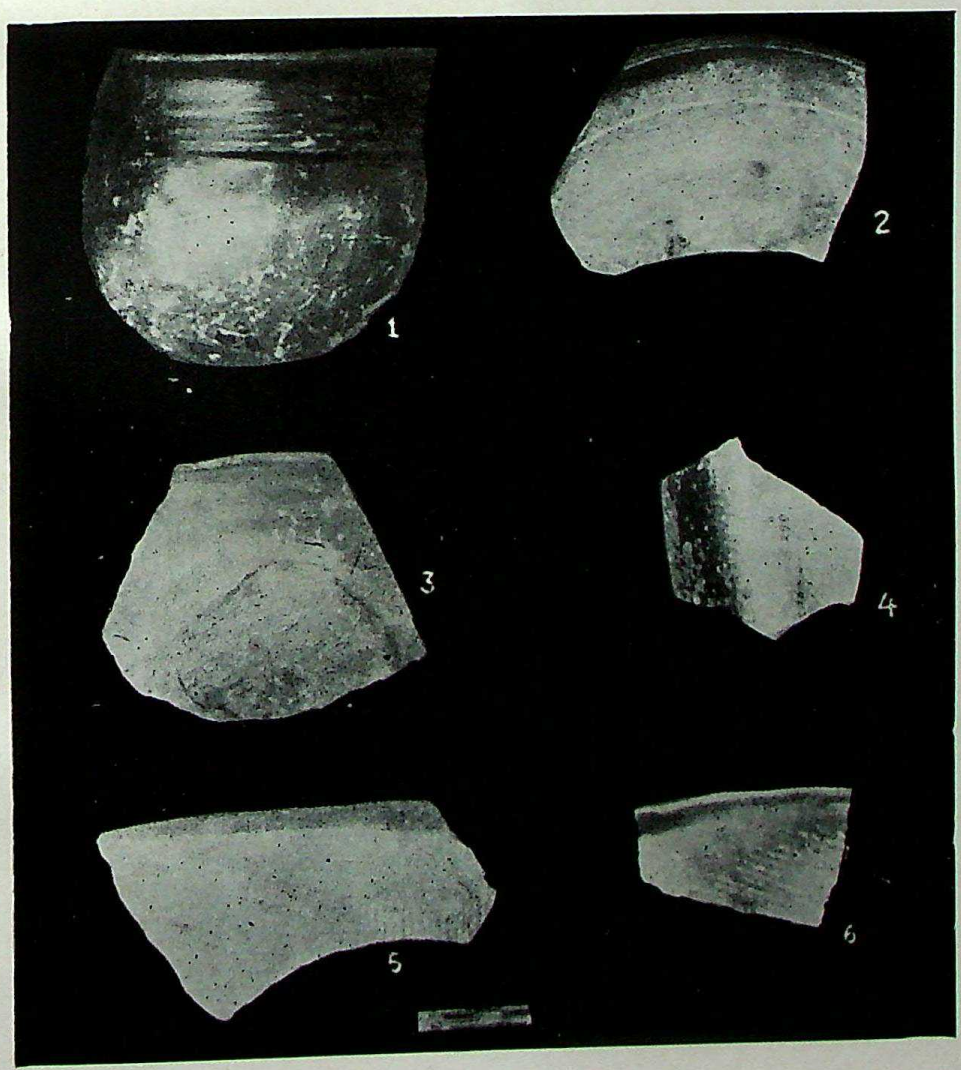

Plate IXb. Chirand, Black-and-Red Ware.

CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

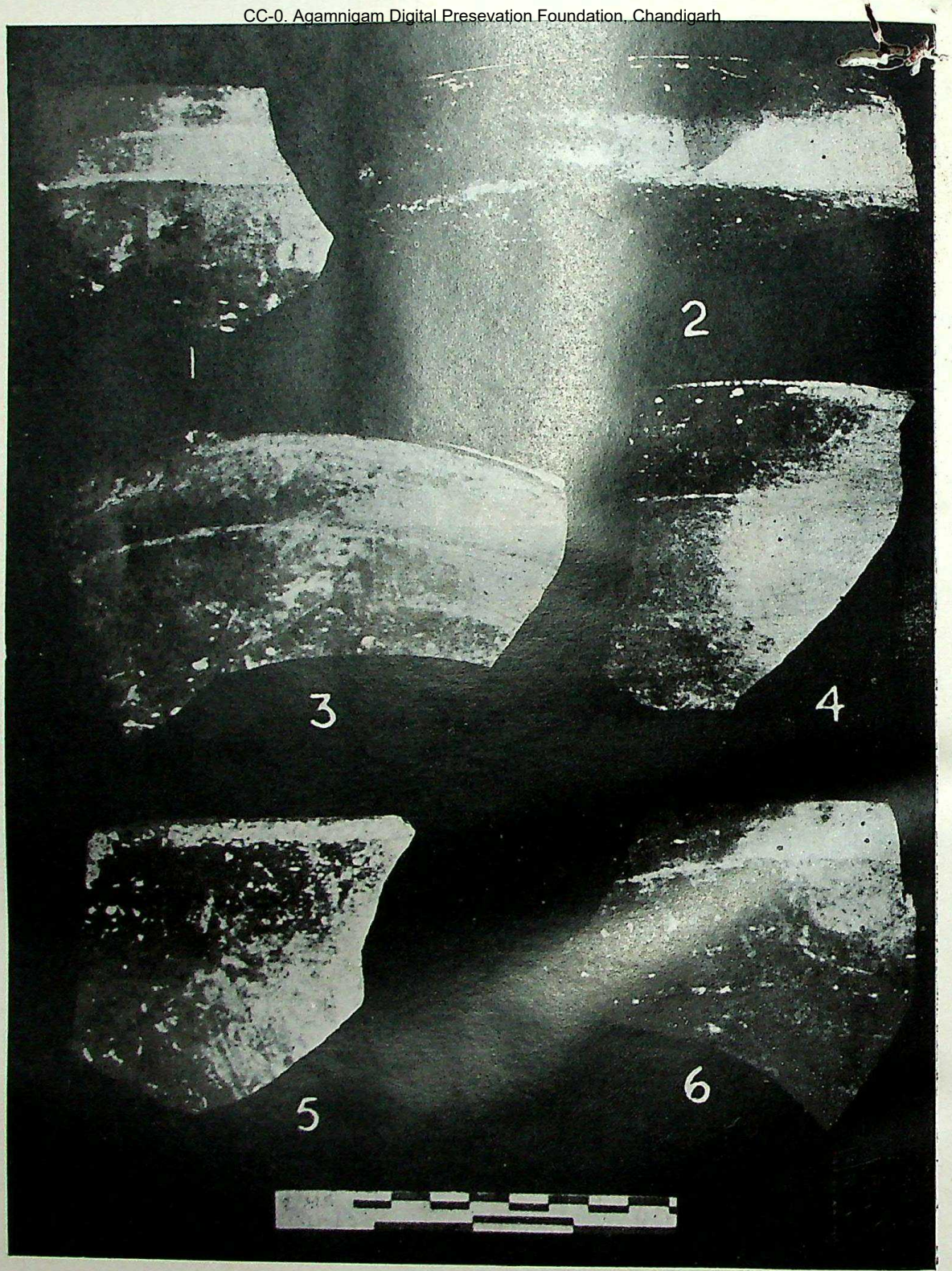

Plate X. Sonpur, Black-and-Red Ware.

Plate XI. Pandu-Rajar-Dhibi, Black-and-Red Ware.

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CC-0. Agamnigam Digital Presevation Foundation, Chandigarh

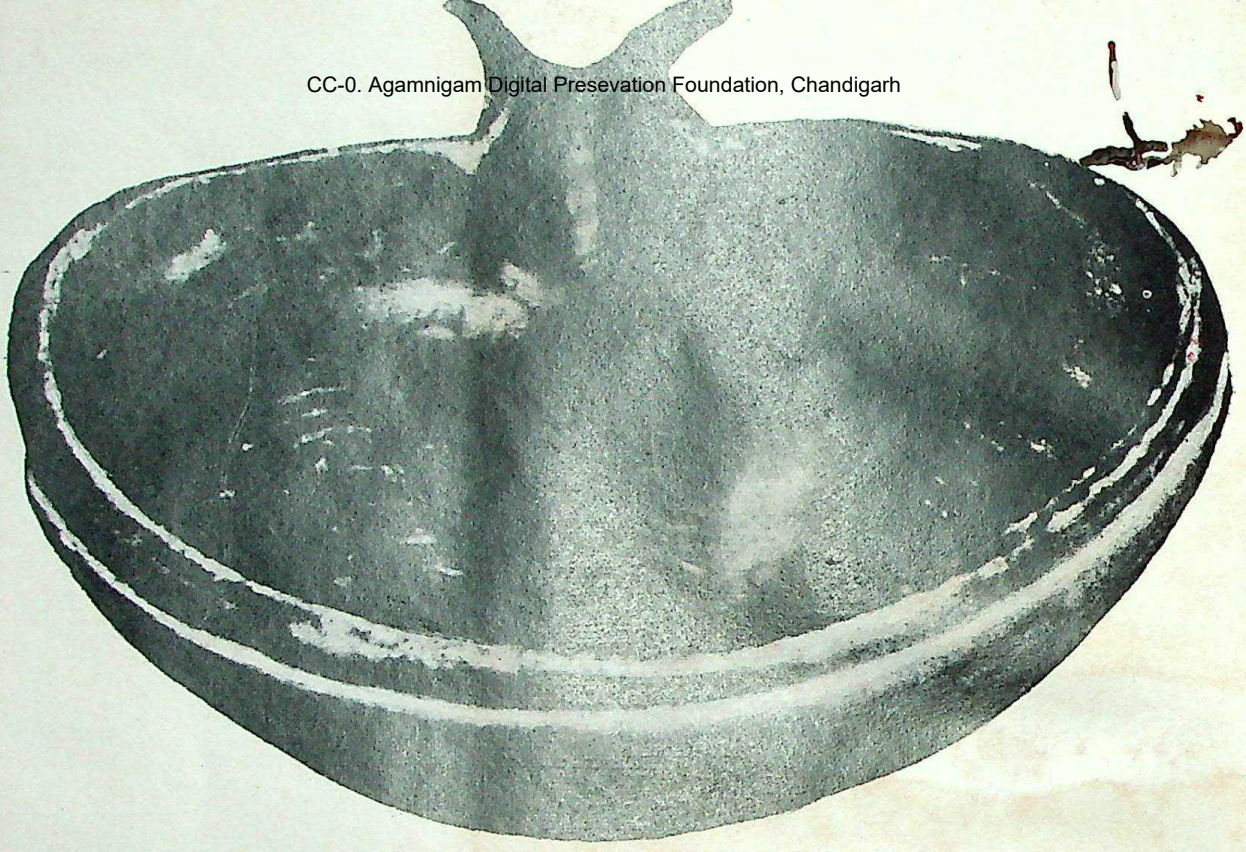

Plate XIIa. Pandu-Rajar-Dhibi, painted Black-and-Red Ware.

Plate XIIb. Brahmagiri, Black-and-Red Ware.

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Agam Kala
Prakashan